

**EXPLORATION OF THE INFLUENCE OF WAITING TIMES IN AN
ANTENATAL CLINIC ON THE UTILISATION OF BASIC ANTENATAL
CARE (BANC) IN A MIDWIFERY OBSTETRIC UNIT: DESCRIPTIVE
CASE STUDY IN THE WESTERN CAPE, SOUTH AFRICA**

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DECLARATION

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ABSTRACT

Background

Antenatal care (ANC) is important to reduce maternal and neonatal morbidity and mortality. Through the service, the women receive vitamin supplementation, they are regularly screened for complications, and when complications arise, the service manages the complications. Therefore, utilisation of the service needs to be improved through the identification of the barriers to ANC utilisation. Reducing and improving ANC barriers could result in improved ANC coverage. The aim of the study was to explore and describe the contextual realities within the antenatal clinic that influence waiting times and lead to underutilisation of the BANC services within an MOU in the Cape Metropole in the Western Cape.

Methods

The study used a qualitative descriptive single case study design with three embedded units of analysis. Three data sources were used, namely researcher observation, and interviews with midwives and pregnant women. Semi-structured interviews were held with 12 pregnant women and two midwives. Unstructured workflow and patient flow observations were done by the researcher. Purposive sampling was used to recruit the pregnant women and the midwives working in the antenatal clinic for the study. Ethical and institutional approval was acquired prior to data collection. Data were analysed using the framework method.

Results

The first unit of analysis revealed two themes which were ANC and waiting times. This consisted of the description of the workflow with ANC activities and the patients' waiting times. The overall observation was that there were long waiting times. The second unit of analysis revealed four themes which were waiting times, ANC utilisation, barriers to waiting times and facilitators of waiting times. The patients had mixed perceptions of waiting times, and the women attended ANC despite long waiting times. The women felt obligated to attend ANC and recognised the importance of the service. The barriers to waiting times were related to staff factors, operational functioning, lack of communication, and equipment and infrastructure problems. Facilitators of waiting times were related to operational factors and staff factors. The third unit of analysis had three themes that emerged, namely ANC utilisation, barriers to waiting times and facilitators of waiting times. ANC utilisation revealed patient barriers, women seeking care late in the pregnancy and healthcare barriers. The barriers to waiting times, according to the midwives, were related to shortage of staff and equipment, poor infrastructure, teaching students, workflow and patient acuity, and management functions. The

facilitators of waiting times were having an efficient means of documentation, increasing staff numbers and equipment, improving the infrastructure and using a booking system for appointments.

Conclusion

Long waiting times were noted in the antenatal clinic, but the long waiting times did not influence the women's decision to seek ANC. There were many factors that influenced waiting times in the antenatal clinic such as a disorganised patient flow system, attending to follow-up appointments first, equipment shortage and staff factors. The waiting times in the antenatal clinic can be reduced if appropriate solutions are implemented.

Keywords

Long waiting times, barriers to ANC, ANC utilization, facilitators of waiting time, barriers to waiting time

OPSOMMING

Agtergrond

Vorgeboorte sorg is belangrik om moederlike en neonatale siektes en sterftes te verminder. Met hierdie diens, ontvang die vroue vitamien aanvullings, gereelde ondersoeke vir komplikasies en wanneer komplikasies ontstaan, word die komplikasies hanteer. Daarom, moet die gebruik van die diens verbeter word deur die hindernisse vir die gebruik van vorgeboortesorg te identifiseer. Die vermindering en verbetering van vorgeboortesorg hindernisse, kan lei tot verbeterde benutting van vorgeboortesorg. Die doel van die studie was om die kontekstuele realiteite binne die vorgeboortekliniek te verken en te beskryf wat wagtye beïnvloed en tot onderbenutting van die vorgeboorte dienste binne 'n verloskundige eenheid (MOU) in die Kaapse Metropool in die Wes-Kaap lei.

Metode

Die studie het 'n kwalitatiewe beskrywende enkele gevallestudie-ontwerp met drie ingebede analyse-eenhede gebruik. Drie databronne, naamlik navorser waarneming, vroedvroue en swanger vroue was gebruik. Semi-gestruktureerde onderhoude is met twaalf swanger vroue en twee vroedvroue uitgevoer. Ongestruktureerde werkvloei en pasiëntvloei waarneming is deur die navorser uitgevoer. Die studie het doelgerigte steekproefneming gebruik om die swanger vroue en die vroedvroue wat in die vorgeboortekliniek werk te verwerf. Etiese en institusionele goedkeuring is verkry voor die insameling van data. Data is met behulp van die raamwerkmetode ontleed.

Resultate

Die eerste eenheid van analise het twee temas naamlik, vorgeboortesorg en wagtye onthul. Dit het bestaan uit die beskrywing van die werkvloei met vorgeboortesorg aktiwiteite en die wagtye van pasiënte. Die algemene waarneming was dat daar lang wagtye was. Die tweede eenheid van analise het vier temas onthul, naamlik wagtye, benutting van vorgeboortesorg, hindernisse vir wagtye en fasiliteerders van wagtye. Die pasiënte het gemengde persepsies van wagtye gehad, en die vroue het die vorgeboortesorg bygewoon ten spyte van die lang wagtye. Die vroue het verplig gevoel om die vorgeboortesorg by te woon en het die belangrikheid van die diens erken. Die hindernisse vir wagtye was verwant aan personeelfaktore, operasionele funksionering, gebrek aan kommunikasie en toerusting en infrastruktuurprobleme. Fasiliteerders van wagtye was verwant aan operasionele faktore en personeelfaktore. Die derde eenheid van analise het drie temas onthul, naamlik die benutting van vorgeboortesorg, hindernisse vir wagtye en fasiliteerders van wagtye. Vorgeboortesorg

benutting het pasiëntehindernisse geopenbaar, naamlik, vroue wat voorgeboortesorg laat in hul swangerskap benut en gesondheidsorg hindernisse. Die hindernisse vir die wagtye, soos geopenbaar deur die vroedvroue hou verband met die tekort aan personeel en toerusting, swak infrastruktuur, onderrig van studente, werkvloei, pasiënt komplikasie en bestuursfunksies. Die fasiliteerders van wagtye was doeltreffende dokumentasie, die getalle van personeel en toerusting, die verbetering van infrastruktuur en 'n afspraak besprekingstelsel.

Slotsom

Verlengde wagtye in die voorgeboortekliniek was waargeneem. Die lang wagtye het egter nie die vrou se besluit beïnvloed om voorgeboorte sorg te benut nie. Daar was baie faktore wat die wagtye in die voorgeboortekliniek beïnvloed het, soos 'n ongeorganiseerde pasiëntvloei, die hantering van opvolg afspaaie eerste, toerustingstekort en personeelfaktore. Die wagtye in die voorgeboortekliniek kan verminder word indien toepaslike oplossings geïmplementeer word.

Sleutelwoorde

Lang wagtye, hindernisse van voorgeboortesorg, voorgeboortesorg benutting, fasiliteerders vir wagtye, hindernisse van wagtye

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CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Introduction

Antenatal care (ANC) plays a crucial role in reducing the maternal mortality rate. Due to the high numbers of maternal deaths, the maternal death surveillance and response (MDSR) stressed the importance of maternal deaths being a notifiable death (World Health Organization, 2013:7). This was done in an effort to obtain information on the shortcomings of the care women received so that improvements in maternal healthcare services could be made (World Health Organization, 2013:7). In 2015, 303 000 women died globally due to pregnancy and childbirth-related causes (World Health Organization, 2016:1). This further reiterates the need to reduce and avoid maternal deaths.

The importance of ANC utilisation has become an important focus worldwide as it prevents maternal and neonatal mortality and prevents complications from occurring (Cumber, Diale, Stanly, & Monju, 2016:23). The World Health Organisation (WHO) defines 'antenatal care coverage' as the percentage of women who have had at least one ANC visit with a skilled healthcare worker for reasons relating to pregnancy (World Health Organization, 2013:34). Globally, 85% of women had one ANC visit with a skilled birth attendant, and only 58% received four ANC visits (Basha, 2019:1). The utilisation of ANC services is crucial as pregnancy and childbirth complications is a major cause of death among adolescents in middle to low-income countries (Rurangirwa, Mogren, Nyirazinyoye, Ntaganira, & Krantz, 2017:2). Improving access to ANC services can have a positive effect on maternal mortality rates.

In order to improve antenatal coverage, the barriers to ANC needs to be interrogated so that the utilisation of the service can be improved. There are various barriers to ANC, which include transportation barriers, the attitude of midwives, socio-cultural issues, and long waiting times (Abimbola *et al.*, 2016:962). Waiting times in the antenatal clinic influences women's perception of the service and therefore affects the utilisation of the available services. Kyei-Nimakoh, Carolan-Olah and McCann (2017:7) also found in their study that the most significant barrier to ANC was long waiting times. As a result, this aspect needs further investigation.

Barriers to ANC attendance need to be addressed in order to improve the ANC uptake internationally as well as within South Africa. Effective utilisation of antenatal services is essential if women are to fully benefit from ANC.

This study focused on describing the waiting times during the antenatal period and the influence it has on women's utilisation of basic antenatal care (BANC) in the Western Cape.

1.2 Significance of the problem

In an attempt to monitor and improve health outcomes, in September 2000, world leaders at the Millennium Summit accepted the Millennium Development Goals (MDGs). MDG 5 stipulated a reduction in the maternal mortality rate of 75% between 1990-2015, which was not achieved (Alkema *et al.*, 2016:462). In 2015, the Sustainable Development Goals (SDGs) followed the MDGs, and set a target to reduce the maternal mortality rate by 70 deaths per 100 000 live births by 2030 (Alkema *et al.*, 2016:463). The global maternal deaths decreased from 532 000 in 1990, to 303 000 in 2015, with the largest number of deaths occurring in sub-Saharan Africa (SSA) (201 000) (Alkema *et al.*, 2016:467). Furthermore, in 2015 developed nations had a maternal mortality rate of 12 deaths per 100 000 live births, and SSA accounted for 546 deaths per 100 000 live births (Alkema *et al.*, 2016:467). This emphasises the need to deploy measures to reduce the maternal mortality rate, particularly in SSA, including South Africa.

ANC is important in the prevention of maternal and neonatal morbidity and mortality through detection and treatment of pregnancy complications, the identification of high-risk women and referrals to appropriate levels of care (World Health Organization, 2016:1). Failure to receive ANC by a skilled birth attendant resulted in 50 million women suffering from maternal morbidities due to complications of pregnancy which could have been avoided (Shora, Verma, Jan, & Gupta, 2015:89). Furthermore, in low resource settings, 99% of maternal deaths can be prevented by implementing effective interventions through ANC (World Health Organization, 2016:1). Efforts should thus be made to increase access to ANC.

The fight against the eradication of HIV is a global challenge and ANC provides the means to prevent HIV infection through the prevention of mother-to-child transmission (PMTCT) programmes. Identifying women with HIV during pregnancy is important so their viral loads can be monitored and suppressed during pregnancy and childbirth. This will aid in reducing maternal and neonatal morbidity and mortality associated with HIV. In South Africa, non-pregnancy related infections, particularly HIV-related infections, were the leading cause of maternal mortality between 2011-2016 (Republic of South Africa, 2018:57). Within this category of non-pregnancy related infections, 88.8% of women were HIV positive, and only 60.2% of the women were on antiretroviral therapy (Republic of South Africa, 2018:57). One of the avoidable factors of these maternal deaths was that the women delayed medical assistance and did not seek ANC (Republic of South Africa, 2018:57). Had they attended

ANC, they could have been diagnosed as HIV positive and immediately put on antiretroviral therapy (ART) as per South African policy, thereby increasing the chances of maternal and neonatal survival (National Department of Health, 2019:10).

The WHO (2016:1) previously recommended that women should have a minimum of four ANC visits with a skilled birth attendant. Within SSA, 12 countries were able to achieve more than 50% ANC coverage with four ANC visits (Berhan & Berhan, 2014:95). However, both women and neonates are still dying due to maternal complications during pregnancy. According to Doku and Neupane (2017:1675), if women book their visits early and have four ANC visits, the risk of neonatal mortality can be decreased by 55%. This further reiterates that ANC coverage is poor, and strategies should be implemented to improve utilisation of this service.

The White Paper for the transformation of the health system in South Africa stipulates that a greater emphasis needs to be placed on improving preventative, promotive and curative services for women and children (Department of Health, 1997:61). Furthermore, the Department of Health strives to achieve universal access to healthcare services and improve the quality of the services rendered in an attempt to reduce maternal mortality (Department of Health, 1997:61). Similarly, the Department of Health has also published the National Core Standards which address the need for quality healthcare services in order to improve service delivery. Contained within the National Core Standards is the sub-domain to reduce delays in care (National Department of Health, 2011:6). The standard for this sub-domain is to manage waiting times and queues, and to keep waiting lists as short as possible (National Department of Health, 2011:6). These documents reiterate the importance of access to healthcare services, the quality of services, and that waiting times in healthcare facilities is an issue.

Women's previous experiences of ANC influence their future utilisation of the service. Ganle, Parker, Fitzpatrick and Otupiri (2014:7) stated that women who had negative experiences with maternal care services preferred not to attend ANC at all, or attended ANC by a traditional birth attendant. The quality of ANC services should thus be improved to promote positive experiences during pregnancy, labour and the postpartum period.

The ANC services should moreover address barriers to ANC so that women can increase their access and use the services more effectively. Failure to seek ANC can have dire consequences as reflected in the maternal mortality statistics. Barriers to ANC utilisation such as long waiting times therefore needs to be addressed to improve ANC adherence.

1.3 Rationale

As mentioned, long waiting times in the antenatal clinic is cited as one of the reasons why women do not attend ANC services (Birmeta, Dibaba, & Woldeyohannes, 2013:4). This was also confirmed in a systematic review conducted on the access barriers to obstetric care in healthcare facilities in SSA, which found that long waiting times was a significant barrier to ANC (Kyei-Nimakoh *et al.*, 2017:7).

In 2017, while undertaking an Honours Degree in Advanced Midwifery and Neonatology, the researcher was placed at two antenatal clinics within Cape Town, South Africa. During this placement, the researcher observed that women would arrive before 07h00 at the antenatal clinic and only leave in the afternoon. The researcher also received complaints from the women about how long they had been waiting.

Long waiting times within the public sector has raised so many concerns that the National Department of Health has published a policy on the management of patient waiting times in outpatient departments. Similarly, the Department of Health has established the National Core Standards that also address long waiting times. The purpose of these standards is to improve the quality of health services by identifying the strengths and weaknesses of services, and to provide a framework to ensure that health establishments comply with the pre-set standards (National Department of Health, 2011:2). The patients' rights domain of the National Core Standards similarly addresses the need to reduce waiting times and queues so that patient satisfaction and care can be improved (National Department of Health, 2011:6).

The National Department of Health has made waiting time recommendations for different levels of care. Accordingly, the total time that the patients should spend at the facility is three hours, with a waiting time for services of two hours in primary care facilities (National Department of Health, 2015b:8). However, waiting times within the antenatal clinic were not specified within this document. Reliable data on patient waiting times and the causes thereof in the antenatal clinics in the Western Cape could not be found.

No literature could be found regarding waiting times in the antenatal clinic and the influence of waiting times on BANC utilisation in the metropole of the Western Cape, hence the rationale for the study. It is anticipated that this study could inform guidelines regarding waiting times and explore and describe the influence of waiting times on BANC utilisation in the Western Cape metropole.

1.4 Problem Statement

ANC is essential for maternal and neonatal wellbeing. Prenatal care assists in the detection and prevention of maternal complications. In 2017, 808 women died daily from pregnancy-related complications and childbirth (World Health Organization, 2019c). In developing countries, the chance that a woman dies of maternal-related causes is 130 times higher than among women in developed countries (World Health Organization, 2019c).

Antenatal coverage in South Africa with one ANC visit was 92.9% (Statistics South Africa, 2015:13). The provincial estimates revealed the Western Cape to have the lowest ANC coverage compared to the other provinces (Statistics South Africa, 2015:13); ANC utilisation for the Western Cape was 85.3% (Statistics South Africa, 2015:13). Gauteng and the Free State provinces had the highest ANC coverage of 111.5% and 92.1%, respectively (Statistics South Africa, 2015:13). The high ANC coverage percentage for Gauteng province is likely the result of an underestimation of the ANC client population (Statistics South Africa, 2015:13). Within the Western Cape, effort should thus be made to improve ANC coverage.

Further research is needed to understand the variations in the different services to ensure effective use of health resources. Should waiting times in the antenatal clinics be reduced, the women would be more likely to attend the ANC at the recommended times, resulting in better maternal and neonatal outcomes. The limited information on antenatal clinics' waiting times prevents efforts to find solutions to reduce waiting times. Knowledge of this phenomenon can also be used for policy formulation. Additionally, an accurate measurement of waiting times can be used to create booking systems which could reduce long waiting periods.

The research problem was that increased waiting times during ANC attendance negatively influences ANC utilisation. The assumption was that if the waiting times in the clinics are reduced, the women would be more likely to attend ANC at the recommended times, leading to better maternal and neonatal outcomes.

1.5 Research Question

What are the activities influencing waiting times at the antenatal clinic and does waiting times influence the utilisation of the BANC services within a Midwife Obstetric Unit (MOU) in the Cape Metropole in the Western Cape?

1.6 Research Aim

The aim of the study was to describe and explore the contextual realities within the antenatal clinic that influence waiting times and utilisation of the BANC services within an MOU in the Cape Metropole in the Western Cape.

1.7 Research Objectives

The objectives of this study included:

- RO 1 To describe the activities that influence waiting times within an MOU in the Cape Metropole in the Western Cape.
- RO 2 To describe the waiting times within the antenatal clinic in an MOU in the Cape Metropole in the Western Cape.
- RO 3 To determine the influence of waiting times on ANC attendance among pregnant women within the MOU.
- RO 4 To explore the barriers to waiting times within the MOU that influence BANC utilisation.
- RO 5 To explore the midwives' perceptions on improving waiting times in the antenatal clinic to improve ANC utilisation.

1.8 Theoretical Framework

According to Dickson, Adu-Agyem and Hussein (2018:438), a conceptual framework “explains the path of research and grounds it firmly in theoretical constructs”. The authors further describe that frameworks make research results more meaningful and ensure the extension of knowledge by providing direction for the research inquiry (Dickson *et al.*, 2018:438).

Activity theory (AT) was used as the theoretical framework for this study. The foundational ideas of AT can be traced to the Soviet psychologist Lev Vygotsky (O'Connor, 2015:2). AT is based on the premise that activity comes first, and that doing precedes thinking, and goals, intentions and abstract notions are derived from performing an activity (Mortof & Weber, cited in Hashim, Hazlina Hashim & Jones, 2007:5). Vygotsky's rendition of AT states that the entire work activity is the unit of analysis (Hasan, cited in Hashim *et al.*, 2007:6). Vygotsky further elaborates that the unit of analysis is made up of analytical components called the subject, mediating artefact and object (Figure 1.1). In context, the subject is the person being studied,

the object is the intended activity, and the tools or mediating artefacts are the devices that assist in completing the action.

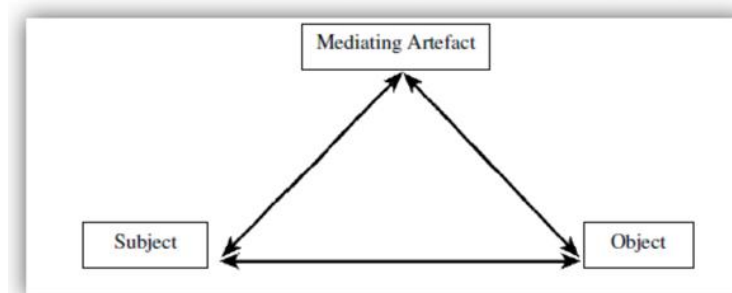


Figure 1.1: Vygotsky's original model of a mediated act (Hashim et al., 2007:10)

Later, Vygotsky's colleague, Leont'ev addressed limitations in Vygotsky's theory and built upon his work (O'Connor, 2015:4). Leont'ev stated that analysis needs to take the relationship between an activity at an individual level and at a group level into consideration (O'Connor, 2015:4).

Engeström also elaborated on Vygotsky's and Leont'ev's rendition of AT and included additional units of analysis (Hashim *et al.*, 2007:6). The first addition was *rules*, which are specifications that inform an individual's actions. The second addition was the *division of labour*, which encompasses the distribution of actions and operations among workers in the organisation. The *rules* and *division of labour* also affect a new plane of reality known as *community*. Through the community, activities and the workforce can be analysed (Hashim *et al.*, 2007:6).

In AT, social actions are facilitated by using technology as tools. The connection between the individual and their environment can be a component of the community. The interaction between subject and community is facilitated by rules, and the relationship between object and community is similarly mediated by the division of labour (Hettinga, cited in Hashim *et al.*, 2007:7). Tools also influence the interaction between the subjects and object. All the analytical components influence one another within the organisation (Figure 1.2).

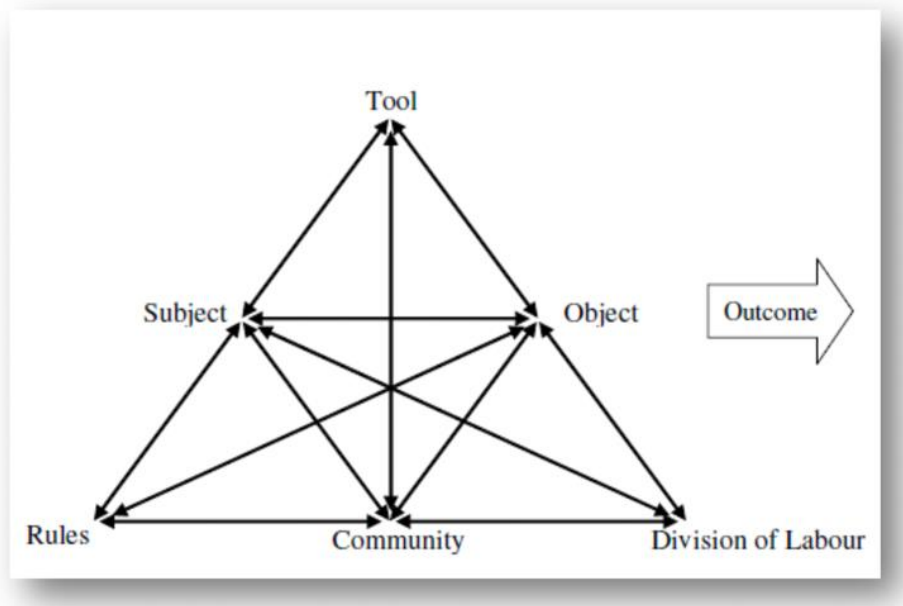


Figure 1.2: Engeström's expanded activity theory model (Engeström, cited in Hashim *et al.*, 2007:6)

In the context of this study, the subject is the midwives, the object is ANC, and the tools are the instruments, signs, posters, language, maternal case records, machines and computers used during the ANC visit. The rules are the laws, regulations, policies, procedures, protocols and standard operating procedures that govern the facility and individuals working in the antenatal clinic. The community is the workers in the MOU who provide and assist in service delivery (e.g. administrators, counsellors, nursing staff, cleaners, and midwives). And lastly, the division of labour is how the work is distributed; which tasks are done by which individuals (see Figure 1.3 for the study's adaptation of the model). The interplay among all these units will give rise to the desired outcome, which is reduced waiting times.

This framework allows for a more structured analysis of the data. The first objective focuses on describing the actual workflow activities that influence waiting times within the MOU. The researcher highlighted constrictions within the workflow based on Engeström's model, which had an influence on the waiting times. While describing the waiting times, the researcher determined development spots within the workflow, which influenced the waiting times in the clinic.

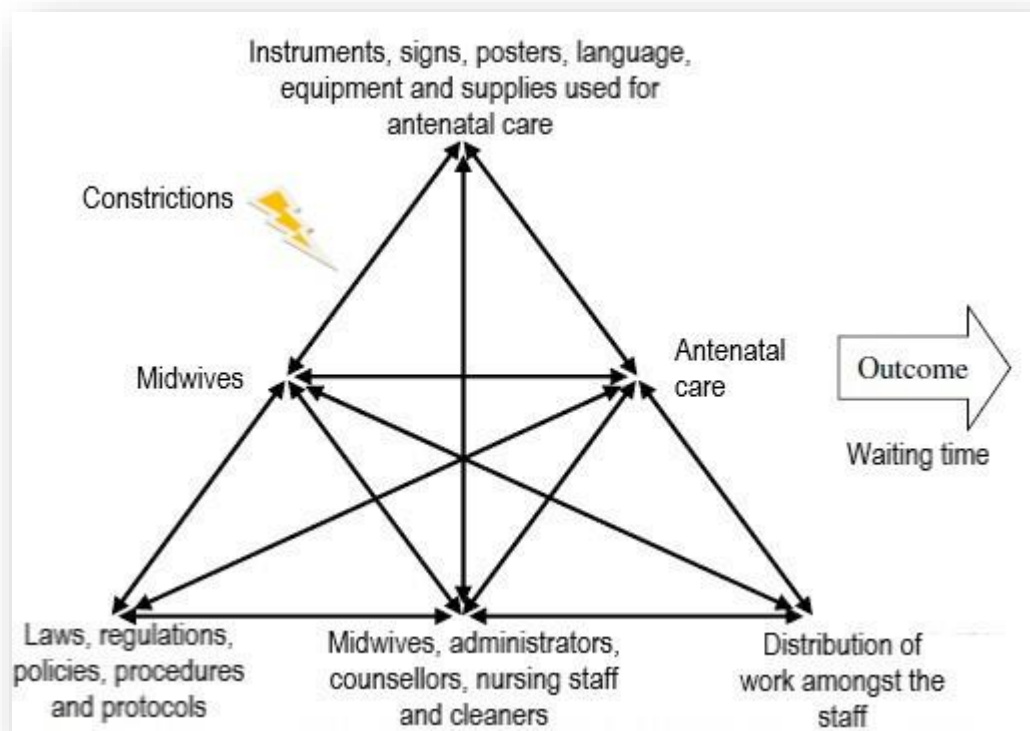


Figure 1.3: Engeström's model adapted to the study

An analysis of these activities allowed the researcher to reflect on the influence of the activities on the waiting period and how the waiting period influenced the utilisation of ANC services. Furthermore, the researcher investigated the barriers to waiting times in the antenatal clinic according to the fourth objective, while identifying areas that required improvement.

1.9 Research Methodology

A qualitative research methodology was used to achieve the objectives of this study. The methodology will be discussed in detail in Chapter Three.

1.9.1 Research Design

A qualitative single descriptive case study approach with multiple units of analysis was used to achieve the objectives of this study. A type 2 case study design was used, which consists of a single case with multiple units of analysis (Yin, 2014:58). The case was the antenatal clinic within the Gugulethu MOU in the Western Cape. The first unit of analysis was waiting times within the antenatal clinic at the Gugulethu MOU. The second unit of analysis was the pregnant women attending the Gugulethu MOU's antenatal clinic, and the third unit of analysis was the midwives working in the antenatal clinic at the Gugulethu MOU.

1.9.2 Study Setting

The study was conducted in the Klipfontein health district of the Western Cape Province, at the Gugulethu MOU. The study setting will be discussed in Chapter Three.

1.9.3 Population and Sampling

The accessible population for this study were the pregnant women who attended the antenatal clinic at the Gugulethu MOU. This included woman attending the clinic for their initial visit (booking visit) and women attending the clinic for a follow-up visit. The population also included the midwives who were on duty in the antenatal clinic at the Gugulethu MOU.

Purposive sampling was used for this study. The sample size was 14 participants, which included 12 pregnant women and two midwives. From the 12 pregnant women, six had their booking visit, and six women had follow-up appointments.

1.9.4 Data Collection Tool

Two semi-structured interview guides based on the research objectives were used for data collection. One interview guide was for the pregnant women, and the other was used for the midwives working in the antenatal clinic. The interview guide was drawn up in English. The interviews started with open-ended questions and were followed by probes to elicit deeper information from the participants. Examples of the interview guides are provided in Appendix 4 and 5. Unstructured observation was used to depict the antenatal clinic's structure, workflow and waiting times.

1.9.5 Pilot interview

Two pilot interviews were conducted. One interview was with a pregnant woman who had a follow-up appointment, and the other interview was with a midwife working in the antenatal clinic. The data from the pilot interviews were included in the data analysis as minor adaptations were made to the interview guide.

1.9.6 Trustworthiness

Trustworthiness in case studies can be achieved through a clearly written research question and propositions that are adequately substantiated, purposeful sampling, systematic data collection and management, and proper data analysis techniques (Baxter & Jack, 2008:556). The researcher aimed to satisfy the four criteria of credibility, dependability, confirmability and

transferability. A detailed explanation of how trustworthiness was ensured is discussed in Chapter Three.

1.9.7 Data Collection

Data collection took place through two methods, namely unstructured observation and in-depth interviews.

1.9.7.1 Unstructured Observation

Descriptive data regarding the layout and functioning of the antenatal clinic at the Gugulethu MOU were obtained through unstructured observation. During the observation, the researcher wrote field notes to document important information related to the clinic's workflow and operational activities.

The physical layout of the Gugulethu MOU is described in Chapter Four, along with a diagram to illustrate the structure of the antenatal clinic. Waiting times and clinic activities were observed among the women who had their follow-up appointments and those who came to the antenatal clinic for their initial booking visit.

1.9.7.2 In-Depth Interviews

The researcher conducted the interviews in a private, unused room, in the antenatal clinic within the Gugulethu MOU. Informed consent was obtained from participants prior to the interviews. Two separate semi-structured interview guides were used, one for the midwives and one for the pregnant women. The interviews consisted of open-ended questions and probes. The interviews were audio-recorded and lasted between 30 to 60 minutes.

1.9.8 Data Analysis

The framework method was used to analyse the data from the interviews. According to Gale, Heath, Cameron, Rashid and Redwood (2013:4-5), the procedure for data analysis is as follows:

- ❖ Transcription
- ❖ Coding
- ❖ Developing a working analytical framework
- ❖ Applying the analytical framework
- ❖ Charting data into the framework matrix
- ❖ Interpreting the data

The data from the observation was described in a narrative summary, and the floorplan of the MOU was illustrated by means of a diagram. Moreover, a narrative description of the workflow activities in the antenatal clinic was presented. The waiting times were described and mapped in a table format, according to the workflow activities of each participant.

1.10 Duration of the study

Ethics approval for the study was obtained from the Health Research Ethics Committee of Stellenbosch University on the 8th of October 2018. Amendments were submitted to the Health Research and Ethics Committee to change the study site, as institutional approval was declined by the first study site. The study site amendment was approved by the Health Research Ethics Committee on the 29th of April 2019. Permission to conduct the study at the Gugulethu MOU was obtained from the Western Cape Government: Department of Health as well as from the facility manager at the Gugulethu MOU on the 11th of July 2019. Data were collected from the 25th of July 2019 to 3rd of October 2019. Data analysis occurred from the 25th of September 2019 to the 24th of October 2019. The completed thesis was submitted on the 2nd of December 2019 for examination.

1.11 Operational definitions

To facilitate understanding in this study, the following definitions are provided:

Antenatal care (ANC): Antenatal care is defined as “the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy”(World Health Organization, 2016:1). For this study, ANC includes the care provided to pregnant women and adolescent girls during pregnancy by midwives in the antenatal clinic.

Midwife: “A midwife is a person who has successfully completed a midwifery education program according to the International Confederation Midwives’ (ICM), essential competencies for basic midwifery practice. The framework of the ICM’s global standards for midwifery education requires a midwife to be recognized in the country where the individual is located; who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title ‘midwife’; and who demonstrates competency in the practice of midwifery” (International Confederation of Midwives, 2005:1). For the study, a midwife is an individual who has the qualification and license to practice as a midwife from the South African Nursing Council, and is practising her profession in the antenatal clinic.

Basic antenatal care (BANC): Basic Antenatal Care is a method used to provide healthcare services to pregnant women in public health facilities in South Africa (Gwele & Patience, 2002:1). In the study, BANC means the basic antenatal care package that is provided to pregnant women in the antenatal clinic.

Waiting time: Waiting time is the total time a patient spends in the facility. It is calculated from the time the patient enters the facility to the time the patient leaves the facility (National Department of Health, 2015b:7). In the context of the study, waiting time refers to the total time a woman spends at the healthcare facility, excluding the consultation time.

Reproductive age: Women between the ages of 15 and 49 are considered to be of reproductive age (World Health Organization, 2019b).

1.12 Chapter Outline

This thesis has five chapters which are structured as follows:

Chapter One: Introduction and background

This chapter consists of the introduction of the study, which provides insight into the research topic. The background also focuses on where the research problem emanated from as well as areas for possible research.

Chapter Two: Literature review

This chapter focuses on the aim of the study with themes created to summarise the published literature relevant to the topic of the study. This indicates what research has been done and what needs to be further explored.

Chapter Three: Research methodology

This chapter provides a clear and detailed description of the research methodology, the research design, data collection and data analysis processes, and the trustworthiness and ethical considerations of the study.

Chapter Four: Data analysis and interpretation

The data analysis is discussed in this chapter, and a description of the researcher's perspective of the data is offered in terms of the themes and subthemes that emerged during data analysis.

Chapter Five: Discussions, conclusions and recommendations

The researcher drew conclusions from the results of the study and made recommendations for healthcare practice and future research in this chapter.

1.13 Significance of the study

Maternal deaths are notifiable deaths as a result of the high maternal mortality rates. Low and middle-income countries account for 99% of the global maternal deaths (World Health Organization, 2015:xi). This translates to 302 000 women who have died in developing regions in 2015 (World Health Organization, 2015:xi). SSA accounts for 66% of the global maternal mortality rates, which translates to 201 000 maternal deaths in 2015 (World Health Organization, 2015:xi).

ANC is an important service as it allows for screening and monitoring during pregnancy, which would allow for early detection and appropriate, timely management of complications. Women need to access this vital service to gain the full benefit of the service.

Globally, 64% of women attended only four ANC visits (World Health Organization, 2016:1). This indicates a need for improvement, and efforts need to be made to increase ANC utilisation; this will contribute to decreasing the maternal and neonatal mortality rates.

A study of this nature has never been conducted in the Western Cape. It was anticipated that the results of the study could inform guidelines and identify barriers to waiting times that effect ANC utilisation. Recommendations on improvement areas can be made so that the functioning of the antenatal clinic can be improved.

1.14 Summary

The aim of the study was to describe and explore the contextual realities within the antenatal clinic that influence waiting times and lead to underutilisation of the BANC services within an MOU in the Cape Metropole in the Western Cape. In this chapter, an explanation was provided on the background, significance and the importance of conducting this research. The research question, research objectives and definitions related to the study were also stated.

A qualitative research design was used with a single case study approach to achieve the objectives of the study. Purposive sampling methods was used, and data were analysed using the framework method. The integrity of the research was ensured by following the ethical principles as a guideline. The duration and layout of the study were described.

The literature review, which follows in Chapter Two, will review and discuss ANC, ANC utilisation, barriers to ANC, waiting times in the antenatal clinic, barriers and facilitators to waiting times and midwife units.

1.15 Conclusion

It has been found that antenatal women experience long waiting times in the antenatal clinics, which are perceived as barriers to ANC utilisation. The experiences of the women can provide insight into the waiting times in the antenatal clinic so that recommendations can be made on how to improve waiting times. Similarly, the midwives' perspectives can provide valuable information about areas that need improvement and the obstacles that affect waiting times.

This research study could also inform policy formulation regarding waiting times in the antenatal clinics, and can be used as a basis for future research into antenatal clinic waiting times and workflow analysis.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In Chapter One, an overview of the study was given, which included aspects such as the significance of the study and the research aim and objectives. The essential aspects of the study's research methodology were also briefly discussed.

This chapter consists of a review of the literature applicable to the study. Grove, Grey and Burns (2015:163) describe a literature review as a process of obtaining relevant research reports, critically evaluating the studies and synthesising the study results. Grove *et al.*, (2015:163) further elaborate that the purpose of a literature review is to provide a description of the current knowledge surrounding the research problem, and it is a platform to identify gaps in the knowledge base. The literature review can contribute to building knowledge in an area of research.

In this chapter, the main themes of the literature review are maternal care, the importance of ANC, ANC coverage, barriers to ANC, barriers and facilitators of waiting times, and midwife units. The literature review discusses research studies from international countries, regional countries, and includes research studies done in South Africa.

2.2 Electing and reviewing the literature

The literature review process started in February 2018. A preliminary literature review was conducted prior to the completion of the research proposal to establish whether any studies had been published on the phenomenon. The aim of this literature review was to determine ANC utilisation trends, waiting times in the antenatal clinic, and barriers to ANC utilisation. The literature review was also used to describe maternal care and barriers and facilitators to waiting times in the antenatal clinic.

The search databases that were used include PUBMED, CINAHL, EBSCOhost, and GOOGLE SCHOLAR. Several varieties of search terms were used, such as “antenatal care” / “prenatal care” / “prelabour care” / “prelabour care” AND “waiting times” / “time waiting” / “wait times”/ “barriers”/ “obstacles”, “ANC utilization”/ ANC coverage, “MOU”/ “midwife obstetric units”/ “birthing centres”/ “midwife led units”, “workflow”/ “flow of work”/ “patient flow” AND “outpatient departments”/ “OPD”/ “ANC”/ “antenatal clinic”. In addition to the search databases,

Stellenbosch University's online library search engine was also used, under the category "articles". Varieties of the same search terms were used for this database.

2.2.1 Maternal care perspectives

The WHO defines 'ANC' as "the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy" (World Health Organization, 2016:1). The aim of ANC is related to risk identification, prevention, managing diseases that affect pregnant women, providing health education and health promotion, and linking women with complications to a referral system to receive more specialised care (World Health Organization, 2016:1).

According to Pattinson (2007:10), ANC originated from the European ANC model in the early 20th century. The traditional ANC model functioned on the premise that regular ANC visits, where women were classified into risk categories to predict potential complications, was the best method to care for women during their pregnancies (Gwele & Patience, 2002:1). The traditional ANC model consisted of one visit every four weeks up to 28 weeks' gestation, then one visit every two weeks until 36 weeks' gestation, and finally weekly visits until labour has commenced. This model amounted to 12 visits for the duration of the pregnancy (Pattinson, 2007:10). This model is congruent with the South African Nursing Council's stipulations regarding the conditions under which a midwife can practice her profession (South African Nursing Council, 1990).

In 2001, the goal-orientated focused antenatal care (FANC) model was recommended by researchers to replace the traditional method. The FANC model consisted of five ANC visits. The schedule of the visits were as follows; first visit at 8-12 weeks' gestation, the second visit at 24-26 weeks' gestation, the third visit at 32 weeks' gestation, the fourth visit at 36-38 weeks' gestation, and then at 41 weeks' gestation if the woman had not delivered (World Health Organization, 2016:105). In 2002, the WHO designed and tested the FANC model which included tests, counselling, and examinations and deemed this the ideal approach to ANC that would maximise health benefits to pregnant women (Gwele & Patience, 2002:1). Similarly, in 2007, the National Department of Health came to the realisation that the traditional ANC model was not well suited in the South African context; they thus modified the WHO's FANC model to suit the South African context (Gwele & Patience, 2002:2). In 2008, the BANC model was implemented at primary healthcare facilities to ensure accessibility to ANC services.

The BANC model consists of five critically timed visits (1st visit, 20, 28, 34 and 38 weeks' gestation) (Hlongwe, 2017:4). Studies were conducted regarding the effectiveness of the

reduced visit model and revealed that perinatal and maternal mortality rates were increased (Hofmeyr & Mentrop, 2015:902). Hofmeyr and Mentrop (2015:902) stated that since the inception of the BANC model, a trend was observed where there were infrequent ANC visits, especially in late pregnancy. This resulted in avoidable maternal and perinatal deaths.

In 2016, the WHO also released updated guidelines on ANC schedules that can be used as a guideline for the various countries. The WHO ANC model consists of nine ANC visits. The first contact is recommended to occur within the first 12 weeks of gestation (World Health Organization, 2016:105). Thereafter, ANC contacts should be scheduled at 20 weeks, 26 weeks, 30 weeks, 34 weeks, 36 weeks, 38 weeks, 40 weeks and 41 weeks if the woman has not given birth (World Health Organization, 2016:105). Similarly, after recognising the role of too few ANC visits on maternal and perinatal deaths, the 'BANC Plus' model was introduced in South Africa. This model stipulates the minimum ANC visits which each woman should receive. The 'Plus' refers to the addition of three ANC visits. The current ANC schedule for BANC Plus visits are the booking visit, 20 weeks, 26-28 weeks, 30-32 weeks, 34 weeks, 36 weeks, 38 weeks and 40 weeks' gestation (Hlongwe, 2017:11). To date, the BANC Plus model is still being implemented in primary healthcare facilities and in MOUs in South Africa.

2.2.2 Importance of antenatal care

According to the WHO (World Health Organization, 2006a:1), health is defined as a "state of physical, mental and social wellbeing and not merely the absence of disease or infirmity". To further elaborate on the scope of health, maternal health refers to the health of women during pregnancy, childbirth and in the postpartum period (World Health Organization, 2019d). Maternal health has increasingly become a vital part of the health services rendered. This is as a result of the high maternal and neonatal morbidity and mortality rates. Although there has been a steady decrease in the maternal mortality rates, it still remains high (World Health Organization, 2019d).

Antenatal care is important for the survival of mothers and babies. According to Cumber, Diale, Stanly and Monju (2016:23), ANC can reduce foetal mortality by up to 40%. The authors' further state that ANC prevents complications as it prepares women and their partners for delivery and provides education regarding warning signs during pregnancy and labour. Antenatal clinics offer micronutrient supplementation and treat ailments and pregnancy-induced diseases (Cumber *et al.*, 2016:23). During ANC visits, women are tested for sexually transmitted diseases and receive treatment for them (e.g. PMTCT) (Cumber *et al.*, 2016:23). The antenatal clinic is also a point of contact to other support services within the healthcare sector.

There are many benefits to attending ANC. It is a vehicle for preventing and decreasing neonatal and maternal morbidity and mortality. Antenatal care attendance does not mean that a woman will not develop preeclampsia or any other diseases, but merely provides the opportunity for early detection of diseases through regular contact and education regarding danger signs and symptoms (World Health Organization, 2016:ix). Despite ANC having a positive effect on reducing maternal and neonatal mortality and the increased availability of ANC services, uptake of the services remains poor.

The SDGs' target for maternal mortality is less than 70 deaths per 100 000 live births by 2030 (Every Woman Every Child, 2016:6). Globally, over the past 25 years, there has been a reduction in the maternal mortality rate by 44% (World Health Organization, 2015:xi). The annual decrease in maternal deaths was from 532 000 in 1990 to 303 000 in 2015 (World Health Organization, 2015:xi). From the global maternal deaths, developing countries make up 99% (302 000) of the total maternal deaths, and SSA is responsible for 66% (201 000) of these maternal deaths (World Health Organization, 2015:xi). The global estimates of maternal mortality revealed that developed regions accounted for 12 deaths per 100 000 live births (1 700 deaths), and developing regions accounted for 239 deaths per 100 000 live births (302 000 deaths) (World Health Organization, 2015:17). In addition, SSA accounted for 546 deaths per 100 000 live births (201 000), which is the highest maternal mortality rate of all regions (World Health Organization, 2015:17). The high maternal mortality in SSA demonstrates the need for maternal health care to be prioritised, as 52% of maternal deaths were avoidable, which further reiterates the need to prioritise maternal care (Every Woman Every Child, 2016:25).

Perinatal and maternal health care are closely related. Maternal care does not only have an influence on the woman receiving the care, but also on the foetus and neonate. Perinatal mortality encompasses the number of stillbirths, which is a foetus delivered with no signs of life, and death in the first week of life, referred to as early neonatal death (World Health Organization, 2019b). The perinatal period commences at 22 completed weeks' gestation and ends at seven days after birth (World Health Organization, 2019b). In 2005, globally, 4 million neonates died with approximately 80% of those deaths occurring in lower-middle-income countries such as SSA (Rhoda, Velaphi, Gebhardt, Kauchali, & Barron, 2018:9). The United Nations agency reported that there had been a 47% decline in the global neonatal mortality rate for the 2005-2015 period (Rhoda *et al.*, 2018:9). The neonatal mortality rate decreased from 36 deaths per 1 000 live births to 19 deaths per 1 000 live births (Rhoda *et al.*, 2018:9). Although the neonatal mortality decreased, there is still work that needs to be done if the SDG target of 12 deaths per 1 000 live births is to be achieved (Rhoda *et al.*, 2018:9).

Neonates are affected by maternal conditions during pregnancy. The main factors contributing to perinatal mortality are preterm birth, low birth weight, intrapartum complications, and congenital abnormalities (Rhoda *et al.*, 2018:10-11). There is thus a strong link between maternal care and neonatal outcomes. In Africa, 300 000 babies die on the day they are born due to inadequate maternal and neonatal care (Lawn, Mongi, & Cousens, 2006:15). Moreover, the risk of a baby dying during the first day of life is 10 per 1 000 live births (Lawn *et al.*, 2006:15). There is also a 4.5 risk of stillbirth and neonatal death as a result of complications in the antenatal period (Lawn *et al.*, 2006:17). Many of the neonatal prevention strategies are related to adequate utilisation of ANC services, which may prevent up to 800 000 neonatal deaths (Lawn *et al.*, 2006:18). Antenatal care is also a vehicle for screening and managing complications, particularly hypertensive disorders of pregnancy; at 90% ANC coverage, 39-71% of neonatal lives could be saved (Lawn *et al.*, 2006:19). Similarly, ANC provides micronutrient supplementation, vaccinations and screens, and treats infections. The culmination of these interventions could save 37-71% of neonatal lives (Lawn *et al.*, 2006:19).

According to Pattinson and Rhoda (2014:22-24), ANC utilisation related to no ANC, delayed ANC and sporadic ANC had an influence on neonatal deaths in the following conditions: birth asphyxia, preterm labour, antepartum haemorrhage, hypertensive disorders, stillbirths, immaturity, and hypoxia. Table 2.1 presents the number of deaths associated with each condition.

Table 2.1: Association of ANC and neonatal deaths

	Booked late in the pregnancy (number of deaths)	Failure to initiate ANC (number of deaths)	Infrequent ANC visits (number of deaths)
Birth asphyxia	184 (3%)		
Preterm labour	284 (3.1%)	815 (8.8%)	
Antepartum haemorrhage	160 (3.7%)	233 (5.4%)	61 (1.4%)
Hypertensive disorders	293 (4.8%)	271 (4.5%)	92 (1.5%)
Still births	419 (4.4%)	454 (4.7%)	91 (1.0%)
Immaturity	284 (3.1%)	815 (8.8%)	
Hypoxia	65 (4.3%)	105 (7%)	21 (1.4%)

(Pattinson & Rhoda, 2014:24)

It thus becomes apparent that ANC is vital to the survival of women and neonates.

2.2.3 Antenatal care coverage

Antenatal care coverage is used to determine the accessibility and utilisation of ANC services by pregnant women (World Health Organization, 2013:34). The WHO (2013:34), defines ‘antenatal coverage’ as the “percentage of women who utilize ANC provided by skilled health personnel for reasons related to pregnancy at least once during pregnancy”.

Regular ANC attendance with skilled birth attendants allow women to receive vital services that are beneficial to their health and that of their future children. As of 2016, the WHO recommends a minimum of eight antenatal visits (World Health Organization, 2016:105); previously, the recommendation was four ANC visits, which provides an explanation as to why most of the data are measuring four antenatal visits as coverage.

Globally, 86% of women had one ANC visit with a skilled birth attendant and 62% of women attended the previously recommended four ANC visits (UNICEF, 2018). Substantial regional disparities exist in ANC coverage; for instance, in terms of one visit with a skilled birth attendant ranging from 69% to 95%. The regions with the highest ANC coverage of one ANC visit, are Latin America and the Caribbean (96.9%), Eastern Europe and Central Asia (95,7%) and East Asia and the Pacific (95,5%) (UNICEF, 2018). The regions with the lowest coverage of one ANC visit, are South Asia (69,3%), West and Central Africa (74,9%) and SSA (79,7%) (UNICEF, 2018).

Table 2.2: ANC coverage of one visit (UNICEF, 2018)

COVERAGE OF ONE ANC VISIT	
Latin America and the Caribbean	96.9%
Eastern Europe and Central Asia	95.7%
East Asia and the Pacific	95.5%
Sub-Saharan Africa	79.7%
West and Central Africa	74.9%
South Asia	69.3%

The National Department of Health of South Africa, in their annual performance plan from 2016/17-2018/19, has set a target of 62.0% for the first antenatal care visit before 20 weeks gestation (Ntloana, Mazanderani, & Sherman, 2017:72). South Africa has reached the target by achieving a 65.2% ANC coverage of one visit before 20 weeks gestation (Ntloana *et al.*, 2017:72). Furthermore, the Western Cape Province in South Africa, achieved 69.6% ANC coverage for the first ANC visit before 20 weeks gestation (Ntloana *et al.*, 2017:72). Cape

Town achieved 66.1% ANC coverage for the first visit before 20 weeks (Ntloana *et al.*, 2017:73). The Mpumalanga and KwaZulu-Natal Provinces has 71.7% and 70.2% ANC coverage for the first visit before 20 weeks gestation, respectively (Ntloana *et al.*, 2017:72). Although the Western Cape Province and Cape Town have met the national target, there is still room for improvement.

Antenatal coverage of four or more visits followed a similar pattern, although fewer women attended the previously recommended four visits. Latin America and the Caribbean (90%), Eastern Europe and Central Asia (86.7%) and East Asia and the Pacific (73.7%) had the highest ANC utilisation of four ANC visits (UNICEF, 2018). The regions which had the least number of women receiving at least four ANC visits were South Asia (46.4%), West and Central Africa (51.7%) and SSA (51.9%) (UNICEF, 2018). In 2016, the ANC coverage of four visits was 75.5% for South Africa, which is close to the global ANC coverage; however, there is still significant room for improvement (UNICEF, 2018).

Table 2.3: ANC coverage of four or more visits (UNICEF, 2018)

COVERAGE OF FOUR OR MORE ANC VISITS	
Latin America and the Caribbean	90%
Eastern Europe and Central Asia	86.7%
East Asia and the Pacific	73.7%
Sub-Saharan Africa	51.9%
West and Central Africa	51.7%
South Asia	46.4%

Data from the UNICEF (2018) revealed further disparities in ANC utilisation between household wealth and urban or rural residences. Globally, 74% of women living in urban areas had four or more ANC visits, as opposed to 47% of women living in rural areas (UNICEF, 2018). Within the Latin American and Caribbean regions, 93% of women from urban areas and 87% from rural areas received four ANC visits (UNICEF, 2018). In Eastern and Southern Africa, 61% of the women who received four ANC visits were from urban areas, and 39% of women were from rural areas (UNICEF, 2018).

Table 2.4: ANC coverage for urban and rural populations (UNICEF, 2018)

COVERAGE OF FOUR OR MORE ANC VISITS		
	Urban	Rural
Latin American and Caribbean regions	93%	87%
Eastern and Southern Africa	61%	39%

Globally, women who occupy the richest 20% of the population in their country are more likely to attend four ANC visits as opposed to poorer women (UNICEF, 2018). In the Latin America and Caribbean region, 96% of women who were in the richest quintile received four ANC visits as opposed to the 84% of women in the poorest quintile (UNICEF, 2018). In the Eastern and Southern African regions, 64% of women in the richest quintile had four ANC visits, as opposed to the 34% of women in the poorest quintile (UNICEF, 2018). The largest disparity was seen in South Asia where 67% of women were in the richest quintile with four ANC visits, and 14% of women were in the poorest quintile with four ANC visits (UNICEF, 2018).

Table 2.5: ANC coverage for rich and poor quintiles (UNICEF, 2018)

COVERAGE OF FOUR OR MORE ANC VISITS		
	Richest quintile	Poorest quintile
Latin America and Caribbean region	96%	84%
Eastern and Southern African regions	64%	34%
South Asia	67%	14%

The timing of the initiation of ANC also influences the number of visits a woman will receive. A study conducted in Tanzania regarding the missed opportunities in ANC for improving the health of pregnant women and new-borns found that 3.6% of women initiated ANC in the first trimester (Konje, Magoma, Hatfield, Kuhn, Sauve & Dewey, 2018:4). The rest of the women initiated ANC during their second and third trimesters (Konje *et al.*, 2018:4).

Another study conducted in Paris, regarding the association between inadequate ANC utilisation and severe perinatal and maternal morbidity, found that 17% of women commenced ANC at 14 weeks' gestation or later (Linard *et al.*, 2018:590). This is above the current recommendation of 12 weeks or less.

In South Central Ethiopia, a study on the effect of an innovative community-based health programme on maternal health service utilisation found that 29% of women started ANC in

their first trimester and 68.3% of women started care in their second trimester (Afework, Admssu, Mekonneb, Hagos, Asegid & Ahmed, 2014:4).

In Shanghai, the average gestational age for initiating ANC was at 23 weeks, with 19.7% of the women initiating care during the recommended first 12 weeks of pregnancy (Zhao, Huang, Yang, Pan, Smith & Xu, 2012:4).

The literature thus demonstrates inadequate ANC utilisation. To fully understand the phenomenon of poor ANC coverage, the barriers to ANC needs to be explored.

2.2.4 Barriers to antenatal care

Worldwide, only half of women receive the recommended ANC during their pregnancy (UNICEF, 2018). The reasons for not attending or having inadequate ANC attendance differs among different populations; however, there are overlapping themes across all populations. The main barriers of poor attendance or the absence of ANC were related to socio-cultural factors, economic and transport factors, and health services.

2.2.4.1 Socio-Cultural Factors

A study conducted in the Netherlands regarding the explanatory factors for first and second-generation non-western women's inadequate prenatal care utilisation found that poor language proficiency together with socio-cultural factors were the main reasons for underutilisation of antenatal services (Boerleider, Manniën, van Stenus, Wiegers, Feijen-de Jong, Spelten & Devillé, 2015:5). Socio-cultural barriers were experienced by 94% and 90% of first and second-generation non-western women, respectively (Boerleider *et al.*, 2015). Health behaviour barriers were experienced by 65% and 18% of first and second-generation non-western women, respectively, and socio-economic factors accounted for 50% and 19% of barriers experienced by first and second-generation non-western women in terms of ANC utilisation (Boerleider *et al.*, 2015). The study also noted that highly educated women were overrepresented in the sample, and this may have led to an underestimation of the number of women with inadequate ANC utilisation, thereby affecting the socio-economic factors (Boerleider *et al.*, 2015:9).

In the Andes of Peru, a study was conducted regarding the factors that influenced women's decisions to seek ANC. A group of women not seeking ANC or who only commenced ANC in the eighth month of pregnancy was used as the study's sample. The barriers highlighted by the study included criticism for having more children, the gender of the healthcare worker, long waiting times and social support (Huaman Ayala, Blumenthal & Sarnquist, 2013:1114-1115).

The criticism from the healthcare personnel, as cited by the women, were having additional children (more than three), being pregnant, which resulted in the women being embarrassed about their relationship status, being single or unmarried, and their age (Huaman Ayala *et al.*, 2013:1114). Kyei-Nimahkoh *et al.* (2017:6) reported similar findings where fear, shame, and shyness, particularly by teenagers, was seen as an obstacle in using ANC services for fear of being reprimanded. Kyei-Nimahkoh *et al.* (2017:6) further elaborate that teenagers do not utilise ANC services due to the shame and stigma associated with being a pregnant adolescent and fear of disclosing the pregnancy. Similarly, in Kenya, women also reported being chastised and discriminated against if their child spacing was not deemed to be appropriate (Pell, Meñaca, Were, Afrah, Chatio, Manda-Taylor, Hamel, Hodgson, Tagbor, Kalilani, Ouma & Pool, 2013:7). In Peru, the women were accused of purposefully having more children so that they could receive benefits such as food and supplies (Huaman Ayala *et al.*, 2013:1114). Even though the accusation was untrue, the embarrassment of the accusation prevented women from seeking ANC.

The second most common reason for failure to attend ANC was that women were embarrassed to be examined by male healthcare workers (Huaman Ayala *et al.*, 2013:1114). Similarly, Kyei-Nimahkoh *et al.* (2017:6) also found that women had an unwillingness to be seen by male healthcare providers, which prevented them from seeking ANC. Women reported being uncomfortable and suspicious of the male healthcare workers' etiquette and bedside manners (Huaman Ayala *et al.*, 2013:1114). Some of the women felt that the male workers performed too many internal examinations (Huaman Ayala *et al.*, 2013:1115).

The third reason cited as a barrier to ANC in the study was social support. The women who did not attend ANC reported that they were encouraged by their partners and relatives to seek ANC, but they still refused; therefore, social influence on these women was limited (Huaman Ayala *et al.*, 2013:1115). Dissimilarly, Kyei-Nimahkoh *et al.* (2017:7) stated that women who belonged to Muslim and African traditional religions used ANC services less often due to cultural restrictions and their relatives and community members preventing them from seeking ANC. Conversely, some of the women also reported being pressurised into attending ANC; however, if the pressure was eliminated the women would still not seek ANC (Huaman Ayala *et al.*, 2013:1115). Another study by Sibiya, Ngxongo, and Bhengu (2018:3), regarding the access and utilisation of ANC services in a rural community of KwaZulu-Natal, found that peer and community influence and parental approval of the pregnancy were elements that contributed to women not seeking ANC.

A systematic review done on the access barriers to obstetric care at health facilities in SSA found many access barriers related to socio-cultural factors and acceptability of the service.

This factor encapsulates a variety of elements, including a lack of health literacy, women's self-esteem, community and socio-cultural preferences and stigma (Kyei-Nimakoh *et al.*, 2017:7). The systematic review depicted that women's ignorance about ANC services was a barrier to ANC. Women perceived ANC as no different from other healthcare services, and they were unaware of the type of care provided and the nature of the service (Kyei-Nimakoh *et al.*, 2017:7). This false assumption resulted in women not utilising ANC services.

Additionally, a lack of health literacy was also noted as a barrier to ANC. Women reported being unaware of the necessity to use ANC services, citing that they have an absence of illness or they are "doing fine", which negates the need to seek ANC (Kyei-Nimakoh *et al.*, 2017:7). Contrary to the women's lack of health literacy, women in the Eastern Cape of South Africa accessed maternal health services more frequently when they found the information provided on the service to be useful (Tsawe & Susuman, 2014:4). A meta-synthesis on why women do not use antenatal services provided a similar account with regard to health literacy. In low and middle-income countries, the women cited that pregnancy is a healthy physical state and therefore there is no need to seek ANC as there was no threat to their wellbeing (Finlayson & Downe, 2013:4). Pregnancy was viewed as a normal part of life and not a medical condition that requires monitoring and supervision (Finlayson & Downe, 2013:6). The necessity of monitoring is negated by the belief that there is nothing wrong with the pregnancy, therefore they will not attend ANC. Finlayson and Downe (2013:6) further explain that these perceptions were typically held by multiparous women who have had positive pregnancy experiences.

Kyei-Nimakoh *et al.* (2017:7) had similar findings regarding multiparous women, stating that the use of obstetric services decreases with increasing parity. This implies that the more children a woman has, the less likely she will be to use obstetric services, as opposed to nulliparous women or women with two or fewer children. Similarly, in Kenya, Malawi, and to a lesser degree Ghana, multiparous women tended to seek ANC later in their pregnancies, with some women waiting until the ninth month of pregnancy before attending ANC (Pell *et al.*, 2013:6). The reasons for multiparous women utilising ANC services less frequently were because they were accustomed to the experience of pregnancy. They were more concerned with obtaining the antenatal card for delivery access than monitoring their pregnancy (Pell *et al.*, 2013:6). A lack of childcare where the children are still young was also cited as one of the reasons why multiparous women do not seek ANC (Boerleider *et al.*, 2015:8). Opposing results were found in a study conducted in north-central Nigeria regarding patterns of utilisation of antenatal and delivery services, where higher ANC utilisation rates were noted in

multiparous women (Abimbola *et al.*, 2016:966). This was evidenced by the 3.5% of women with four or more children who did not attend ANC (Abimbola *et al.*, 2016:966).

Another barrier to ANC utilisation found by Kyei-Nimakoh *et al.* (2017:7), was the low education level of women, their husbands, couples or the household head. Kyei-Nimakoh *et al.* (2017:7) stated that an education level above secondary school was associated with higher levels of ANC utilisation. This finding was confirmed by Abimbola *et al.* (2016:966), who discovered that women with higher educational exposure had higher rates of ANC utilisation as opposed to those who had lower or no educational exposure. Tsawe and Susuman (2014:4) similarly confirm the link between ANC utilisation and education. They noted that women with secondary education were 1.8 times more likely to attend ANC than women with no education. They further said that 28.6% of women with primary education attended ANC, which was the lowest of all the education categories (Tsawe & Susuman, 2014:4). This further reiterates the link between higher education levels and greater ANC usage.

Social factors related to a woman's self-esteem and autonomy were additional barriers to ANC utilisation. These barriers manifested in the literature as husbands not permitting their wives to seek ANC, women requiring permission to attend ANC from their husbands or relatives, women's lack of autonomy, and poor decision making within the family unit (Kyei-Nimakoh *et al.*, 2017:6). These findings were confirmed by another study which depicted that parents or inlaws might prevent a woman from receiving ANC because the couple was financially dependent on the parents or inlaws (Konje *et al.*, 2018:7). A study by Anyait *et al.* (cited in Kyei-Nimakoh *et al.*, 2017:6) also mentioned that women's enhanced decision-making capabilities promoted antenatal attendance but decreased the chances of delivering in health facilities. Other barriers to ANC utilisation cited by Kyei-Nimakoh *et al.* (2017:7) were fear of medical procedures such as surgery, episiotomys and blood transfusions.

In the Geita district of northwest Tanzania, a study was conducted regarding the missed opportunities in ANC for improving the health of pregnant women and new-borns. It was found that partner involvement and HIV were the biggest barriers to ANC utilisation (Konje *et al.*, 2018:6). The study discovered that men's lack of interest in the pregnancy and their unwillingness to engage during the pregnancy resulted in some women not attending ANC. This finding was reiterated by Pell *et al.* (2013:7), in a study regarding the factors affecting ANC attendance in Ghana, Kenya, and Malawi. Kenyan women indicated that a lack of involvement from their partners in ANC decision making, as well as HIV-related stigma, were barriers to ANC. Pell *et al.* (2013:7) further explain that women were afraid of attending ANC due to fear of being informed of their HIV status, and this could have disastrous repercussions such as the women being accused of adultery or being abandoned by their husbands if their

husband found out about their status. Fear of HIV testing by couples who were unwilling to undergo HIV testing together was also reported by Konje *et al.* (2018:6) as a barrier to ANC utilisation. Similarly, Kyei-Nimakoh *et al.* (2017:6), found that fear of HIV-related stigma was a barrier to ANC.

Community and cultural beliefs also influence women's decision to attend ANC as found by Konje *et al.* (2018:8), who stated that women in Tanzania do not disclose their pregnancies in the first trimester for fear of being bewitched. In Malawi, women would delay ANC until the fourth month to avoid witchcraft from harming the pregnancy (Pell *et al.*, 2013:6). In Ghana and Kenya, some women and community members believe that they have a greater risk of being the victim of witchcraft when they are pregnant and often attributed pregnancy losses to witchcraft (Pell *et al.*, 2013:6). Despite this belief, most women in these countries did not see it as a reason to delay or avoid ANC. These findings were confirmed by Ngomane and Mulaudzi (2012:33), who conducted a study regarding the indigenous beliefs and practices that influence the delayed attendance of antenatal clinics in Limpopo province, South Africa. The study revealed that women considered it a taboo to share news about the pregnancy with friends and distant relatives (Ngomane & Mulaudzi, 2012:33). Mathole (cited in Ngomane & Mulaudzi, 2012:33) stated that in early pregnancy women from Zimbabwe kept their pregnancies a secret for fear of witchcraft as this is the period when the foetus is being formed. The women believe that hiding the pregnancy will protect the foetus from evil spirits or from jealous people who wish to bewitch the mother so that she can have a miscarriage or a malformed infant (Ngomane & Mulaudzi, 2012:33). A study conducted by Chapman (cited in Ngomane & Mulaudzi 2012:33) in Mozambique stated that women purposefully delay ANC to protect the foetus from human and spiritual harm. The women believe that contact with other women and the clinic may result in evil spirits harming the foetus.

Pell *et al.* (2013:6) also determined that primigravida's and teenagers are prone to seek ANC late or avoid ANC altogether. The authors (Pell *et al.*, 2013:6) elaborated that their lack of awareness regarding the signs and symptoms of pregnancy leads to an unintentional delay in ANC. Teenagers and unmarried women also delayed ANC in an attempt to hide the pregnancies to avoid potential social consequences such as expulsion from school or home, gossip, stigma and being abandoned by their partners (Pell *et al.*, 2013:6).

Other barriers to ANC were age, medical aids and the use of hematinics. According to Tsawe and Susuman (2014:4), women above the age of 40 used ANC services less frequently than women aged 15-40. However, this evidence was contradicted by Abimbola *et al.* (2016:966), who stated that age was not found to be a significant barrier to ANC utilisation.

Tsawe and Susuman (2014:4) also noted in their study that access to medical aid improved ANC attendance. They elaborated that women with no medical aid accessed maternal health services less frequently than women who had medical aid, at 31% and 89.5%, respectively.

Konje *et al.* (2018:8) also describe the use of hematinics as a barrier to ANC. The study elaborated that women thought iron supplements would prolong their pregnancy, exaggerate their morning sickness and cause negative pregnancy outcomes (Konje *et al.*, 2018:8). In an attempt to avoid the use of hematinics for a long period, women would delay seeking ANC (Konje *et al.*, 2018:8).

2.2.4.2 Economic and transport factors

Economic and transport factors were the most common barriers that were highlighted. According to Abimbola *et al.* (2016:966), lack of money was a common barrier to ANC utilisation. Twenty-six percent of unemployed women did not attend ANC as opposed to 7.3% of employed women who had not attended ANC (Abimbola *et al.*, 2016:966). Similarly, Tsawe and Susuman (2014:4) found that 42.2% of women with no financial constraints accessed maternal healthcare services as opposed to 18.2% of women who had financial constraints.

Konje *et al.* (2018:7) stated that poverty negatively impacted on ANC utilisation. The study found that women with no source of income in the family experienced attending ANC as a financial burden in terms of transport fares, a maternity dress, and other hidden costs. Ngomane and Mulaudzi (2012:34) also found that a shortage of money and long travelling distances to the clinics was a barrier to ANC.

In Kenya, Ghana, and Malawi, most women earned money through subsistence farming or their involvement with small businesses (Pell *et al.*, 2013:7). Unemployed women had to rely on their husbands and relatives to meet the costs of ANC which reduced their decision-making capabilities (Pell *et al.*, 2013:7). Many women cultivated land alongside their husbands and were responsible for cooking meals during the day (Pell *et al.*, 2013:7). Taking time out from their work to attend ANC would result in a loss of income, which was experienced as a barrier to ANC. Kyei-Nimakoh *et al.* (2017:7) reported similar findings, stating that women and/or their partners who had agricultural jobs, or who were unemployed, used ANC services less frequently. Furthermore, women also experienced the physical demands of their work and the pregnancy as a barrier to ANC as they were too exhausted from work to make the journey to the healthcare facilities (Pell *et al.*, 2013:7).

In rural South Africa, distance to the healthcare facility was one of the barriers to ANC. Women reported that they had to travel vast distances in order to receive adequate ANC (Tsawe &

Susuman, 2014:4). The distance to the facility also determined the number of ANC visits that the women would attend (Tsawe & Susuman, 2014:4). In Kenya and Malawi, women reported that they would wait until the sixth or seventh month of their pregnancy before attending ANC to reduce the cost of travelling to the antenatal clinic (Pell *et al.*, 2013:7). In Tanzania, women also reported waiting until the third trimester to initiate ANC as a result of the cost associated with the journey to the antenatal clinic (Konje *et al.*, 2018:7). Tsawe and Susuman (2014:4) further stated that women who travelled less than 20 km to the healthcare facility accessed ANC 37.7% more than women who travelled more than 20 km. The study also found that women's means of transport affected ANC utilisation. Women who walked (44.4%) to the antenatal clinic utilised the service more often than women who used public (35.9%) and private transport (16.7%) (Tsawe & Susuman, 2014:4).

2.2.4.3 Health service factors

The location of the services was reported as a barrier to ANC utilisation as women had to travel long distances to access the service. In terms of a health service perspective, this barrier is related to poorly located facilities and an insufficient number of facilities to meet the demand for the service (Kyei-Nimakoh *et al.*, 2017:7).

Kyei-Nimakoh *et al.* (2017:7) also found that the cost of obstetric services was a barrier to ANC for some users, especially women with low socio-economic status in rural areas. Even when obstetric services were free, the indirect costs associated with ANC was seen as a barrier (Finlayson & Downe, 2013:7). Indirect cost was perceived by women as transportation cost, loss of a days' labour, and the possibility of being told to purchase additional medications.

Interaction with healthcare staff was found to be a barrier to ANC. In Kenya, some women reported that they attended ANC early but were sent home and told to return when the pregnancy was visible (Pell *et al.*, 2013:6). However, statements from the healthcare staff revealed that they encourage all women to book ANC visits early in the pregnancy. In Malawi, women were referred to the hospital to confirm the pregnancy as the clinic staff was unable to do so (Pell *et al.*, 2013:6).

Community and cultural preferences were seen as additional barriers to ANC with regard to health service operations and staff performance. According to Kyei-Nimakoh *et al.* (2017:6), in SSA many women had preferences for home births and having relatives nearby as the relatives were more attentive. Ngomane and Mulaudzi (2012:34) found similar results stating that healthcare providers' lack of understanding regarding cultural beliefs resulted in a lack of support for women. Some women in the study preferred to deliver at home where their views

were respected. The women also felt that their home environment was more comfortable, less restrictive, and they could receive care and support from their family members (Ngomane & Mulaudzi, 2012:36). The participants further stated that they were not allowed to bring along their partners for support during the labour process. They felt the hospitals' routines were not in line with their personal values and practices (Ngomane & Mulaudzi, 2012:36). Moreover, women stated that they were not afforded the opportunity to give birth in their preferred positions (Kyei-Nimakoh *et al.*, 2017:6). As a result, the women would not utilise the healthcare facilities for ANC or for their confinements.

Poor infrastructure and shortages or the absence of equipment, supplies, and drugs were highlighted as a barrier to ANC. In Tanzania, a shortage of drugs and supplies at the healthcare facilities were cited as reasons why women did not attend ANC (Konje *et al.*, 2018:7). This was confirmed by Sibiya *et al.* (2018:4), in KwaZulu-Natal, where women also voiced concerns regarding scarcity and unavailability of resources in the clinic. The women specified that there was not enough staff in the clinic nor were there designated nurses to attend to pregnant women; there was also a lack of treatment space and supplies (Sibiya *et al.*, 2018:4). In SSA, Kyei-Nimakoh *et al.* (2017:8) found that drugs and essential supplies were lacking or absent from facilities which made women less inclined to use the services. Poor infrastructure and inadequate facilities with regard to laboratory services, ambulance services, reliable power, and water supply were additional factors that made the health services less desirable for the pregnant women (Kyei-Nimakoh *et al.*, 2017:8).

Staff interpersonal skills and clinical skills, whether perceived or from previous experiences, hindered ANC utilisation. Kyei-Nimakoh *et al.* (2017:8) found that a lack of respect by healthcare providers, lack of confidence in health professionals and lack of commitment to work negatively impacted on pregnant women's use of ANC services. Additional factors included negative staff attitude, lack of supportive care, poor assessment during labour and lack of supervision of healthcare workers (Mselle *et al.* cited by Kyei-Nimakoh *et al.*, 2017:8). Similar findings were reported by Ngomane and Mulaudzi (2012:36), where women reported that they were reluctant to attend ANC due to the attitude of the healthcare personnel. The women shared that the quality of care in midwifery units was sub-standard when compared with the care given by traditional birth attendants (Ngomane & Mulaudzi, 2012:36). Gupta and Gupta (cited in Ngomane & Mulaudzi, 2012:36) stated that women's family members took them home after witnessing the negative and unsympathetic attitudes of the midwives and nurses. The women were not given psychological support and were deprived of food and water during labour (Ngomane & Mulaudzi, 2012:36). Deeming this unacceptable, the family members would take the woman home to be attended by a traditional birth attendant.

Tsawe and Susuman (2014:6) found that the shortage of staff had a negative impact on ANC utilisation. The attitude of healthcare professionals towards their patients was informed by their stigma related to the woman's health problem and social circumstances (Tsawe & Susuman, 2014:6). A lack of knowledge from healthcare providers contributed to women not utilising maternal care services.

Another barrier to ANC was long waiting times in the clinic. Women reported having to wait in long queues before being attended to by healthcare professionals (Tsawe & Susuman, 2014:6). Long waiting times and shortages of staff decreased women's satisfaction with the service and this negatively impacted on the utilisation of ANC services (Tsawe & Susuman, 2014:6). These factors result in a vicious cycle of events that affect women's satisfaction with the service and ultimately their utilisation of the service. The shortage of staff affects and leads to long waiting times and staff attending to large numbers of women could result in the staff taking out their frustration on the patients; this results in women not wanting to return to the facility (Tsawe & Susuman, 2014:6).

2.2.5 Waiting times during ANC

A study conducted on the predictors of prenatal care satisfaction among pregnant women in American Samoa, revealed that prenatal care satisfaction was an important determinant of the use of prenatal services (Adeyinka, Jukic, McGarvey, Muasau-Howard, Faiai & Hawley, 2017:1). The study found that the time needed to attend ANC was the main determinant of satisfaction. The time needed was viewed as the travelling time to and from the clinic, waiting times in the clinic, the amount of time spent with the healthcare professional, and time away from their employment to attend appointments (Adeyinka *et al.*, 2017:7). Similar findings were reported in Peru, where the third reason for not seeking ANC was time (Huaman Ayala *et al.*, 2013:1115). Also in the context of Peru, the time barrier was seen as inconvenient clinic operation hours, and long waiting times.

In Samoa, one of the predominant themes that arose from a satisfaction survey was long waiting times (Adeyinka *et al.*, 2017:6). The participants indicated that the long waiting times could be as a result of limited human resources and a lack of availability of equipment (Adeyinka *et al.*, 2017:6). Satisfaction scores among women who waited more than two hours before being attended by a healthcare professional were 20.3 points lower than among women who waited less than 30 minutes (Adeyinka *et al.*, 2017:5). This demonstrates that long waiting times decrease a woman's perception of satisfaction, and poor satisfaction is related to poor ANC attendance. Moreover, 7.3% of the participants spent between 0 to 30 minutes in the clinic, 30.5% of the women spent between 30 minutes to one hour in the clinic, 14.6% of the

women spent between one hour to one hour 30 minutes in the clinic, 15.2% of the women spent between one hour 30 minutes to two hours in the clinic. Further, 32.2% of the participants spent more than two hours at the antenatal clinic (Adeyinka *et al.*, 2017:5). The average time that women spent waiting to see a healthcare professional was 54.7 minutes, and the average amount of time the women spent with the healthcare professional was 17.8 minutes (Adeyinka *et al.*, 2017:5).

Similar findings were reported in California, in the United States of America, where 50% of surveyed women reported that they were unhappy with certain aspects of ANC. The most frequently cited negative experience was waiting to see the doctor, with 29% of the women reporting this an unsatisfactory event (Mikhail & Curry, 1999:342). According to Mikhail and Curry (1999:343), the second most frequently reported impediment to ANC was long waiting times, with 50.8% of women experiencing it as a barrier to utilising ANC. Of the women who rated the prenatal service as inadequate, 53.5% experienced long waiting times as an impediment to prenatal care (Mikhail & Curry, 1999:343). Similarly, 68.4% of the women rated the service as intermediate, and 43.7% of the women who rated the service as adequate experienced long waiting times as a reason not to attend prenatal services (Mikhail & Curry, 1999:343).

In central Asia, a study was conducted regarding the satisfaction of Kazakhstani women with ANC. The study demonstrated that time spent with the healthcare provider was an important indicator of satisfaction with ANC services (Dauletyarova, Semenova, Kaylubaeva, Manabaeva, Toktabayeva, Zhelpakova, Yurkovskaya, Tlemissov, Antonova & Grijibovski, 2018:8). In the study, women's dissatisfaction was related to waiting times and time spent with the healthcare provider. In Kazakhstan, the average waiting time was 35.7 minutes and ranged between 0 and 300 minutes (Dauletyarova *et al.*, 2018:4). It was discovered that 77.4% of the women waited between 0 to 59 minutes before being seen by a healthcare professional, 16.6% waited between 60 to 119 minutes, and 6% of women waited more than 120 minutes before being seen by a healthcare professional (Dauletyarova *et al.*, 2018:4). The study also demonstrated that women spent between three to 60 minutes in consultation with the healthcare provider, with a mean of 19.8 minutes. The study further revealed that women's satisfaction with the service was more likely to increase if they waited between one and two hours, as opposed to women who waited less than one hour. The reasons for this finding could be explained by the women's perceptions that comprehensive assessments take time, practitioners make careful notes and longer queues is an indication of the healthcare professional's popularity (Dauletyarova *et al.*, 2018:8).

In Nigeria, a study was conducted among pregnant women regarding their perception and satisfaction with the quality of ANC services. It was found that time spent at the hospital and doctor communication had an influence on patient satisfaction (Nwaeze, Enabor, Oluwasola & Aimakhu, 2013:22). The average time women spent in the antenatal clinic was 3.8 hours and ranged from one to seven hours. Also, 5.1% of the women who spent less than three hours at the antenatal clinic were dissatisfied with the waiting times, and 94.9% were satisfied with the waiting times (Nwaeze *et al.*, 2013:25). Where waiting times were longer than three hours, 85.4% of the women were satisfied with the waiting times and 14.6% of women were not satisfied with the waiting times (Nwaeze *et al.*, 2013:26). The last category for the time spent at the antenatal clinic was “too long”, were 64.9% of the women were satisfied and 35.1% were not satisfied with the waiting times in the antenatal clinic (Nwaeze *et al.*, 2013:26). The researchers further elaborated that most of the women reported waiting times as being long.

In north-central Nigeria, another study reported long waiting times in the healthcare facilities, with 15.5% of the women reporting that the long waiting times were a barrier to ANC (Abimbola *et al.*, 2016:967). According to Nwaeze *et al.* (2013:27), queue management was not only dependent on the time that women had to wait but also on the women's perception of waiting times.

In Western Kenya, a study was conducted regarding the barriers and facilitators to antenatal and delivery care, which found that long waiting times were a barrier to ANC (Mason, Dellicour, Ter Kuile, Ouma, Phillips-Howard, Were, Laserson & Desai, 2015:4). The study reported that the waiting times were often weighed up against the duties that the woman had to attend to and was one of the reasons for nonattendance in the antenatal clinic. This view was not reported by all the participants though; some said that they were assisted within good time (Mason *et al.*, 2015:5). The researchers further elaborated that some women reported that nurses would rather chat among themselves than work, which contributed to the long waiting times and was seen by women as a barrier to ANC.

In the West Coast of the Western Cape, South Africa, a study was conducted regarding the information needs to improve the utilisation of ANC services and found that waiting times in the clinic was experienced as a barrier to ANC (Smeda, 2017:74-75). The women in the study reported that the clinic staff was responsible for the long waiting times as they attended to the pregnant women in an unhurried manner.

2.2.5.1 Barriers and facilitators of waiting times

The researcher could not find literature related to the causes of waiting times in the antenatal clinic or in an MOU. Therefore, the researcher looked at literature related to the causes of waiting times and waiting time improvements related to clinics and outpatient departments in general.

Waiting times are extremely variable and context-specific. A literature review on the use of simulation to solve outpatient clinic problems stated that poor appointment systems, poor resource allocation and poor patient flow were the major reasons for long waiting times and long working hours (Hong, Shang, Arumugam, & Yusuff, 2013:29). The literature suggested that simulation is an effective means to address the barriers of long waiting times. Simulation allows facility management to predict workflow intervention outcomes which can improve service delivery (Hong *et al.*, 2013:30). The simulation makes accurate predictions with multiple situations so that the best course of action can be taken in relation to the specific context. This is a useful tool as real experiments are difficult to implement without disrupting the normal operational functioning of the clinic. The scope of the simulation includes, but is not limited to, patient flow, human resources, physical capacity, patient arrival rate and patient service rates (Hong *et al.*, 2013:30).

One of the major contributors to long waiting times was associated with appointment systems. An effective appointment system is crucial to reducing waiting times and improving the quality of the service. Appointment systems ensure timely access to healthcare services and effective use of equipment and human resources (Hong *et al.*, 2013:31). There are many factors that influence an appointment system, some of which are related to patient arrival time, service time, appointment cancellations, patient appointment preference, the experience of the scheduler and the availability of information technology (Hong *et al.*, 2013:31).

Patient arrival patterns have demonstrated various effects on patient waiting times. Warner and Smith (cited in Hong *et al.*, 2013:31) compared the effect of constant patient arrival times with sporadic patient arrival times. The results concluded that constant patient arrival times reduced the patient waiting time from 40.6 minutes to 24.0 minutes. This finding was also echoed in a study on wait and consultation times in primary healthcare services in Mozambique. The study found that 48% of the patients arrived to register at the clinic before 09:30am and 71% of the patients registered before 10:30am (Wagenaar, Gimbel, Hoek, Pfeiffer, Michel, Cuembelo, Quembo, Afonso, Gloyd, Lambdin, Micek, Porthé & Sherr, 2016:6). This resulted in bottlenecks within the facility and long waiting times, especially in the morning.

Additionally, Fetter and Thompson (cited in Hong *et al.*, 2013:31) found that the late arrival of the doctor increased patient waiting times. Their study found that if the doctor was an hour late, the waiting time per patient would be increased by 27 minutes for those with appointments, and for a walk-in patient, it would be increased by 152 minutes (Fetter and Thompson cited in Hong *et al.*, 2013:31). In Ethiopia, it was also discovered that 45.3% and 33.6% of participants from two respective referral hospitals felt that the staff were not punctual, which caused increased waiting times (Belayneh, Woldie, Berhanu, & Tamiru, 2017:7). Healthcare provider punctuality is thus a cause of long waiting times.

According to Kachhal *et al.* (cited in Hong *et al.*, 2013:32), uniform distribution of the workload according to the type of patient problems resulted in a 44.7% reduction in waiting times. Similarly, a study by Harper and Gamlin (cited in Hong *et al.*, 2013:32) found that when appointments were spread over the whole clinic session, a 10-minute reduction in waiting time was noted for each patient. The type of condition and the time of the appointment also influenced the waiting times. Patients with low consultation times should thus be given appointments during the early clinic sessions (Klassen & Rohleder, cited in Hong *et al.*, 2013:32). This was proven to be an effective strategy to reduce patient waiting times without compromising the healthcare members' utilisation rate (White *et al.*, cited in Hong *et al.*, 2013:32). Therefore, effective distribution of work and appointments have a positive effect on patient waiting times.

Patient waiting times can be improved by the use of various appointment rules. The application of appointment rules needs to be tailored to the specific context in order for it to be effective in reducing waiting times.

A change in clinic procedure or its location can similarly have a significant impact on the patient flow within a facility. According to Groothuis *et al.* (cited in Hong *et al.*, 2013:34), a 33% reduction in patient turnaround time can be achieved by relocating departments that function together. However, this is dependent on the available infrastructure and can have major financial implications.

In Atlanta, Georgia of the United States of America, a study was conducted regarding improving the patient flow in an obstetric unit. The study setting was a medical centre, and the study used simulation to predict the workflow improvements. The study found that an increase in patient volume resulted in more beds being utilised across all obstetric units (Griffin, Xia, Peng, & Keskinocak, 2012:7). The study identified where the major bottlenecks occurred in the hospital and made recommendations on how to reduce the bottlenecks. Beds within the

facility were relocated to increase efficiency; this resulted in fewer bottlenecks and improved the throughput of patients (Griffin *et al.*, 2012:10).

Trainees in the clinic can also influence waiting times. The effect of trainees on waiting times was investigated in Portland, Oregon, in terms of outpatient clinic flow. The study found that during high patient volume sessions, the presence of trainees was associated with longer consultation times (Goldstein, Hribar, Sarah, & Chiang, 2017:766). During sessions with 14 or more patients, the presence of trainees resulted in a 20 minute longer consultation (Goldstein *et al.*, 2017:766). The study also states that the involvement of trainees, not only their presence, increased the session length. The study additionally investigated the association of trainees and the timing of the session, and discovered that when trainees were allocated in the first half of a session, it resulted in longer session lengths (Goldstein *et al.*, 2017:767). The presence of trainees in the last quarter of the session also resulted in longer consultation times (Goldstein *et al.*, 2017:767). Chepenik and Pinker (2017:474) similarly mention that residents evaluate patients at a slower rate than attending physicians. To reduce the impact of the slower work pace on waiting time, Chepenik and Pinker (2017:474) suggest that trainee supervision be scheduled at a time that best suits the patient flow, e.g. during the time of the day when there is a low workload. Longer consultation times will affect the waiting times of the next patients; therefore, the presence of trainees can be viewed as a cause of long waiting times.

In India, a study was conducted on the determinants of long waiting periods in outpatient departments and recommendations on reducing the waiting time in a super speciality hospital. The study found that patient numbers varied throughout the week, with Mondays and Tuesdays having the most patients when compared to the rest of the week (Sundresh, 2017:31494). The other findings were related to the areas that needed improvements; 12.6% of the participants stated that the registration counter needed improvements, and 14% stated that there needed to be an increase in consultation chambers (Sundresh, 2017:31495). The measures that were implemented to improve the waiting times were the addition of more registration counters, the registration forms were modified, more staff were appointed to manage the telephones, a dedicated biochemistry analyser was provided and an alert system was implemented for patients who were waiting for longer than one hour (Sundresh, 2017:31497).

In Ethiopia, a study on the determinants of patient waiting times in the general outpatient departments attributed long registration time, searching for cards, many patients with few doctors, and long consultation times to be the cause of extended waiting times (Belayneh *et al.*, 2017:7). The study further elaborated that the long waiting time may be as a result of the

poor infrastructure, where the rooms are not sufficient to attend to all the patients (Belayneh *et al.*, 2017:13).

Outpatient departments are complex facilities where diverse patients proceed through various processes during the clinic visit. As a result of the diversity of the clientele within the clinic, the patient flow within the facility can be complex. Patient flow as a reason for long waiting times is complex and often compounded by other operational factors. Some of the reasons that contributed to long waiting times were unevenly distributed time slots, irregular calling sequence, late starts to a session and unused session times (Hong *et al.*, 2013:34). The means employed to improve the waiting times were distributing the scheduling slots evenly, starting the clinic on time, removing the irregular calling sequence and eliminating unused session time (Hong *et al.*, 2013:34). These methods significantly reduced waiting times and clinic overtime.

According to Chand *et al.* (cited in Hong *et al.*, 2013:34-35), the factors that improved patient waiting times were related to the distribution of patient arrivals, a centralised phone call system, the removal of batching on patient records and the creation of one patient arrival queue. These measures were suggested to significantly reduce waiting times and increase the utilisation time of healthcare professionals.

A study to improve support processes using simulation in an orthopaedic clinic implemented three improvement settings (Rohleder *et al.*, cited in Hong *et al.*, 2013:35), namely improved staffing levels, an efficient appointment system and staff punctuality. The study found that waiting times were reduced by 33% after the improvement settings were implemented. Similarly, a study on the impact of staff resources on patient flow in a psychiatric emergency department demonstrated that more staff resulted in shorter waiting times (Chepenik & Pinker, 2017:473). The study mentioned that the addition of a half-time worker (4-hour shift) during periods of high workload was of more benefit than a full-time worker throughout the workday (Chepenik & Pinker, 2017:473).

Another means to improve patient flow within a clinic is to direct patients to the shortest queue. Edward *et al.* (cited in Hong *et al.*, 2013:34) compared a serial patient flow process with a quasi-parallel patient flow process in two different clinics. In the serial process clinic, the patients waited in a single queue and in the quasi-parallel process clinic the patients were directed to the shortest queue (Hong *et al.*, 2013:34). The study found that waiting times could be reduced by 25-29% if the quasi-parallel patient flow was used. Similarly, Chepenik and Pinker (2017:473) also stated that by employing queuing models, the patient flow could be

improved and overcrowding can be reduced. The queuing model also allows for bottlenecks to be identified and the efficiency of the service to be improved.

The literature has revealed many barriers to waiting times along with their solutions; however, the factors that influence waiting times are specific to the context in which they occur. Therefore, a thorough analysis of the workflow and the environment need to be conducted so that effective improvement strategies can be implemented.

2.2.6 Midwifery Units: Characteristics and key components

In England, women have a choice of where they would like to give birth. The women have three options, the first being to deliver in an obstetric unit or maternity hospital, or birth in midwifery units, either free-standing or alongside, or home births (Walsh, Midwifery, Spiby, Grigg, Dodwell, Mccourt, Health, Culley, Science, Bishop, Behaviour & Pacanowski, 2018:10). Midwifery units are birthing centres that resemble home-like environments and do not routinely use technology while assisting women (Walsh *et al.*, 2018:10). These units are appropriate for low-risk women for whom vaginal birth is anticipated. Free-standing midwifery units are separate from obstetric units and need to transfer women via an ambulance to an obstetric unit in the event of complications arising (Walsh *et al.*, 2018:10). Alongside midwifery units are within hospital complexes that have an obstetric unit (Walsh *et al.*, 2018:10). The alongside units could be on another floor, in another wing, in an adjacent corridor or occasionally in a separate building. These units provide care to low-risk women and offer emergency secondary/tertiary level care before transferring labouring women who developed complications to the obstetric units (Walsh *et al.*, 2018:10).

Midwifery units have many benefits when compared to obstetric units. They reduce labour and birth interventions, are less costly, caesarean section rates are reduced by two-thirds, and the chance of vaginal birth is significantly higher (Brocklehurst *et al.* cited by Walsh *et al.*, 2018).

Muthu and Fischbacher (2004:325) state that midwife-led midwifery units are supervised, organised and run by four midwives and only provide intrapartum care. These units can be free-standing or situated within an obstetric unit. The advantages of midwifery-led units are similar to what Walsh *et al.* (2018:10) mentioned, but with the addition of increasing the midwives' job satisfaction and feeling of autonomy, women are empowered through the freedom to choose the delivery site. This improves the quality of the relationship between the midwife and the mother-to-be, and promotes successful breastfeeding (Muthu & Fischbacher, 2004:326).

In Australia, free-standing midwifery units are run by midwives and are accessed by low-risk women who do not require an obstetric review, nor is there routine involvement of medical or obstetric staff at the facility (Monk, Tracy, Foureur & Tracy, 2013:845). These units are separate from facilities that provide specialised maternal care. Women who develop complications and need specialised care are then referred and transported, via ambulance, to the secondary or tertiary maternity hospital (Monk *et al.*, 2013:846). Monk *et al.* (2013:846) cited the same advantages of midwifery units as the previous two studies, and reported that the delay in treatment due to interfacility transfer could have devastating outcomes for the women and the foetus in times of crises.

In Cape Town, MOUs are comparable to free-standing midwife units. MOUs are situated in areas with high population density and are run by midwives (Van Coeverden de Groot, Davey, Smith, Vader & Van der Merwe, 1978:706). These units operate 24 hours a day and have protocols regarding referral criteria to the various district, secondary and tertiary hospitals (Van Coeverden de Groot *et al.*, 1978:706). A distinction can be made from England and Australia where MOUs typically attend to low-risk women in pregnancy, labour, and the puerperium as opposed to only women in labour.

Antenatal clinics form part of the MOU and all pregnant women, both low-risk and high-risk women, are required to have their first ANC visit at the MOU or BANC site. A BANC site is a non-midwifery clinic that provides ANC. BANC sites were established to increase the accessibility of maternal care and decrease the workload on the limited number of MOUs. Once a woman has had her first ANC visit and she is identified as a high-risk patient, she is then escalated to a higher level of care. If complications arise during pregnancy, labour or the puerperium, a telephonic referral is made to the appropriate facility and the woman is transported via ambulance to the referral hospital (Van Coeverden de Groot *et al.*, 1978:706).

2.3 Summary

In this chapter, a review of the literature was presented which focused on maternal care, the importance of ANC, ANC utilisation, barriers to ANC utilisation, waiting times in the antenatal clinic, barriers and facilitators of waiting times, and characteristics and the key components of the midwifery units. There has been a decrease in the maternal mortality rate, but further improvements and interventions need to be implemented, particularly within SSA which holds the highest maternal mortality rate. ANC coverage is consistently better in developed countries than in developing countries, with SSA having inadequate numbers of ANC coverage.

The barriers to ANC utilisation demonstrated many overlaps among the various countries. Socio-cultural diversity, economic and transport factors, and health service challenges were the major themes regarding utilisation barriers that were derived from the literature. Long waiting times in the antenatal clinic was consistently noted in the various studies. However, women's perception of the long waiting times differed in various countries. The factors that influenced waiting times were related to patient arrival times, staff punctuality, the presence and effectiveness of a scheduling system, the presence of trainees in the clinic and the number of patients in the clinic.

The facilitators of waiting times were related to improving the staffing and the infrastructure, implementation of an appointment system and queue management. A description of the various types of maternity units was also provided.

2.4 Conclusion

Antenatal care utilisation is inadequate in SSA as well as in the Western Cape of South Africa. The importance of ANC in preventing maternal and neonatal mortality should be the driving force for improving ANC utilisation. Improved ANC attendance will result in fewer maternal and neonatal morbidities and mortalities. This could ultimately contribute to the achievement of the SDG of reducing the maternal mortality rate. In order to improve ANC uptake, the barriers to ANC utilisation need to be identified and remedied.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The literature review in Chapter Two discussed maternal health, importance of ANC, ANC coverage, barriers to ANC utilisation, barriers and facilitators waiting time and midwifery units and workflow. The purpose of this chapter is to provide a detailed description of the study's research methodology.

A qualitative methodology was used with a single case study approach, with multiple units of analysis. Qualitative research can be defined as a systematic and subjective approach to doing research (Grove *et al.*, 2015:67). Qualitative research describes the experiences and situations from the participants' perspectives of a particular situation (Grove *et al.*, 2015:67). Qualitative research provides the opportunity to understand human experiences and situations (Grove *et al.*, 2015:20). The qualitative research methodology allowed the researcher to explore the women's experiences regarding waiting times and the effect of the waiting times on ANC utilisation, as well as the midwives' perceptions on improving the waiting times in the antenatal clinic. By using the qualitative research methodology, rich information about the experiences of pregnant women and midwives was obtained and an understanding of the waiting times and its effect on ANC utilisation was achieved. This allowed recommendations to be made on how to improve waiting times in the antenatal clinic so that the utilisation of ANC services can be improved. The aim of the study was to explore and describe the contextual realities within the antenatal clinic that influence waiting times and lead to underutilisation of the BANC services within an MOU in the Cape Metropole in the Western Cape.

3.2 Study setting

A setting is a geographical location where the study takes place (Grove *et al.*, 2015:38). A natural setting was used for this study, and it is a real-life, uncontrolled environment (Grove *et al.*, 2015:38).

South Africa is made up of nine provinces, namely the Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West, Northern Cape, and the Western Cape. The study was conducted in the Western Cape Province which is divided into six districts (Cape Town Metro, West Coast, Cape Winelands, Overberg, Eden, and Central Karoo) with health care services in each district (Gebhardt, 2016:5) (See Figure 3.1).

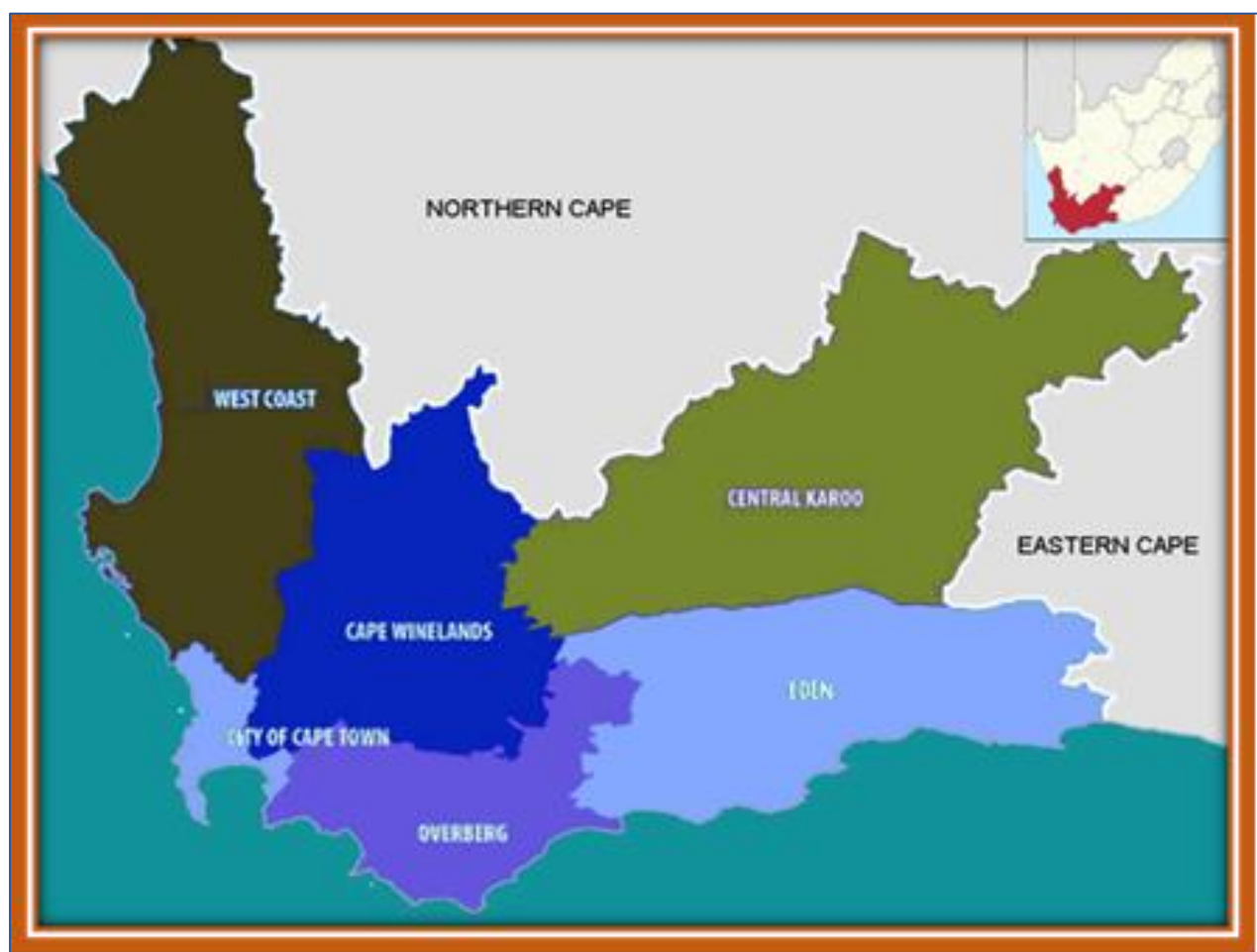


Figure 3.1: Western Cape districts (Gebhardt, 2016:6)

Due to the size of the Cape Town metropolitan district, it was divided into eight sub-health districts (Western, Eastern, Northern, Southern, Tygerberg, Mitchell's Plain, Khayelitsha, and Klipfontein) (Gebhardt, 2016:7) as shown in Figure 3.2.

The study took place in the Klipfontein health district of the Cape metropole of the Western Cape. The MOU in Gugulethu was used to conduct the study (Figure 3.3). The researcher chose this MOU because it serves a large population, and the MOU serves an impoverished community that can benefit from the research by improving service delivery. Waiting times is linked to the perception of quality. Therefore, by investigating the circumstances surrounding waiting times and the barriers and facilitators of waiting times the quality of service delivery can be improved.



Figure 3.2: Cape Metropole sub-districts (Gebhardt, 2016:8)

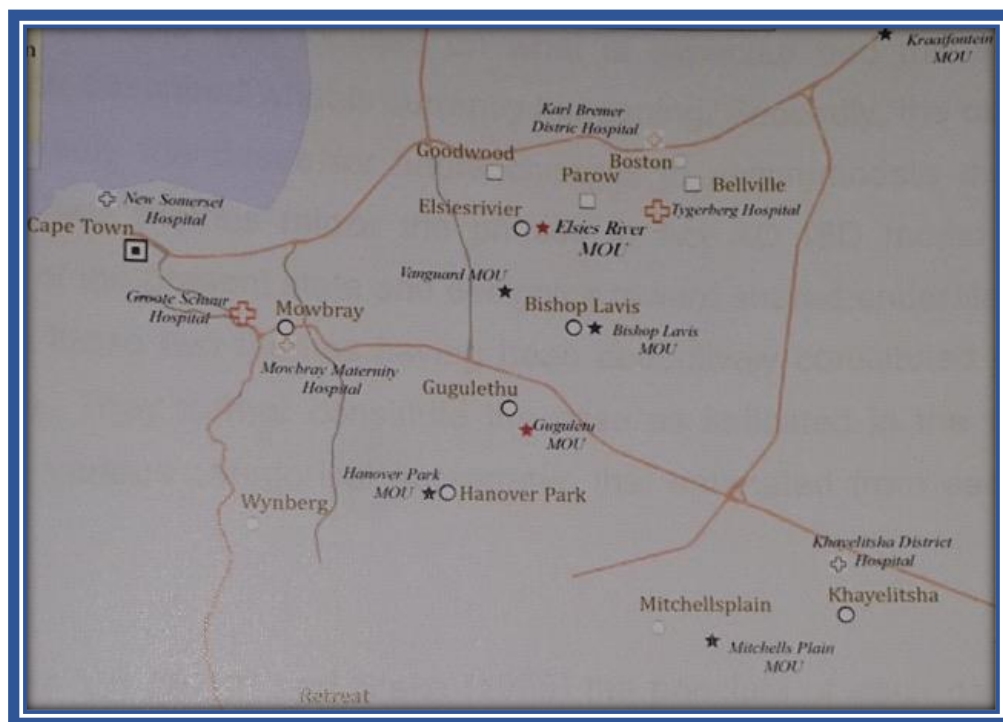


Figure 3.3: Geographic location of Gugulethu MOU (M'Rithaa *et al.*, 2015:99)

3.3 Research design

A single case study approach was used to achieve the objectives of this study. A case study, according to Yin (2003:13), “is an empirical inquiry that investigates a contemporary phenomenon in its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. Case studies explain the complexity of a case and promote a deeper understanding of an activity and its surrounding circumstances (Stake, 1995:xi). A case needs to have a clear vision of its boundaries and provide a detailed account of what those boundaries are (Denscombe, 2010:56).

According to Yin (2014:58), there are four basic case study designs. A type 1 design is a single case with a holistic approach of a single unit of analysis. The type 2 design is a single case with embedded units of analysis. A type 3 case study is a multiple-case (holistic) design with a single unit of analysis, and a type 4 case study is a multiple-case design with multiple embedded units of analysis. Figure 3.4 is the diagrammatic representation of the case study designs.

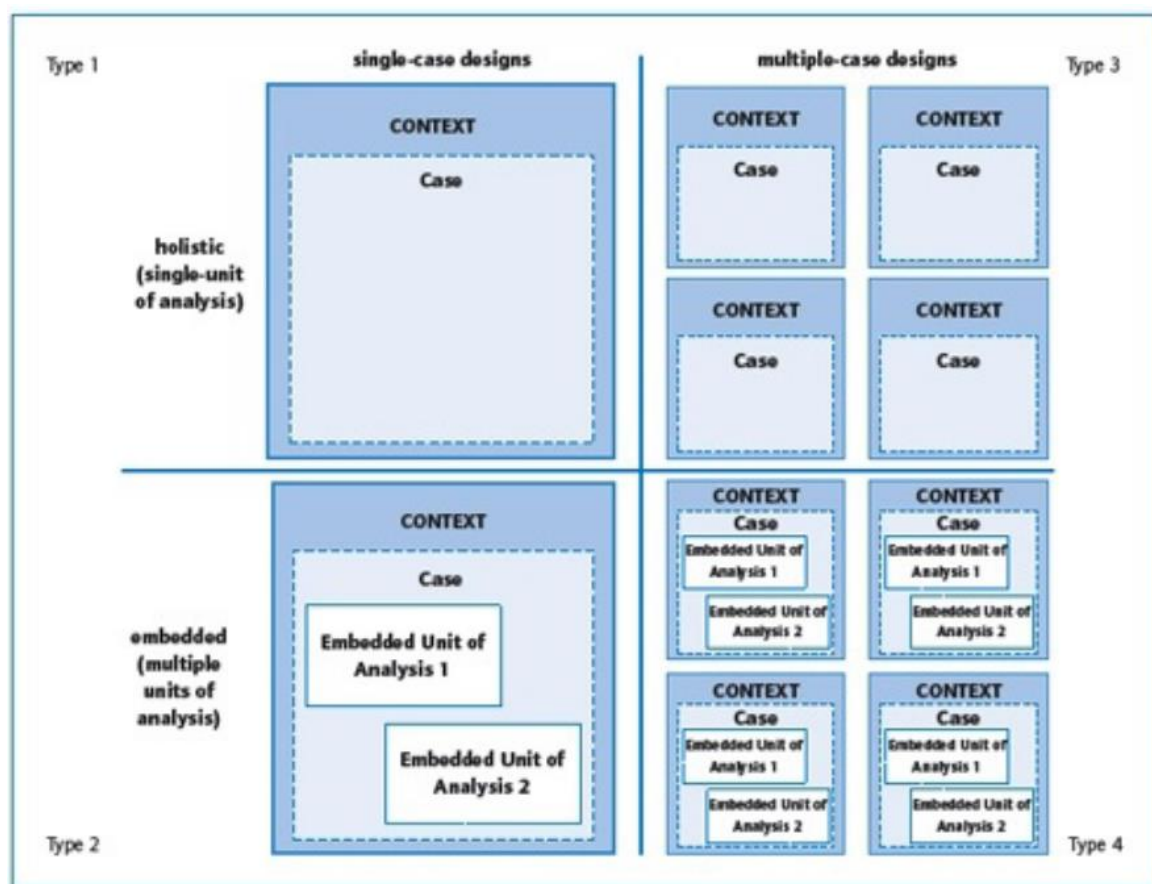


Figure 3.4: Case study designs (Yin, 2014:58)

A type 2 case study design was used for this study as the study consists of a single case with three units of analysis. The researcher chose a case study approach based on the research topic, as waiting times are specific to the various healthcare facilities. Healthcare facilities serving a large population will have a greater demand for the service as opposed to healthcare facilities that are rendering services to smaller populations.

In the context of this research, the case is the antenatal clinic within the Gugulethu MOU. The first unit of analysis is waiting times within the antenatal clinic, where a description of the antenatal clinic was given as well as ANC activities conducted during follow-up appointments and booking appointments. The waiting times for follow-up appointments and booking appointments were described, as well as the patient flow for each participant. The second unit of analysis is the pregnant women attending the antenatal clinic. Through this unit of analysis, the study sought to explore the identified barriers to waiting times and its effects on ANC utilisation. The third unit of analysis is the midwives working in the antenatal clinic. In this unit of analysis, the midwives' perceptions on the barriers to ANC were investigated as well as the ways of improving waiting times in the antenatal clinic. The three units of analysis serves as data triangulation which increases the accuracy of the findings. According to Yin (2014:176), data triangulation in case studies are encouraged as information collected from multiple sources corroborate the same findings. Therefore, the study design included three units of analysis.

3.4 Population and sampling

3.4.1 Population

The population refers to a particular group of individuals who will be the focus of a study (Grove *et al.*, 2015:250). South Africa has an estimated population of 53 701 000, of which 6 131 000 people (11.4%) reside in the Western Cape Province (Gebhardt, 2016:3). The Gugulethu area has a total population of 98 468 according to the census (Republic of South Africa, 2019). From the total population, 30.6% of the women in Gugulethu are of reproductive age. According to the WHO (2006b:9), women of reproductive age are between 15 and 49 years of age. The population for this study was the pregnant women attending the Gugulethu MOU and the midwives working at the Gugulethu MOU.

The accessible population of a study is the population to which a researcher has reasonable access (Grove *et al.*, 2015:250). The accessible population for this study was the pregnant women attending the Gugulethu MOU on the day of data collection, as well as the midwives on duty in the antenatal clinic at the Gugulethu MOU.

3.4.2 Sampling

A sample is a group of elements or units of analysis selected by the researcher, from a specific population (Brink, van der Walt, & van Rensburg, 2012:132). The sample for this study included pregnant women of reproductive age, attending the antenatal clinic at the Gugulethu MOU and the midwives working in the antenatal clinic at the Gugulethu MOU.

Sampling consists of “selecting a group of people, events, behaviours or other elements with which to conduct a study” (Burns & Grove, 2001:365). The researcher used purposive sampling which is a non-probability sampling method. Purposive sampling is when the researcher deliberately selects certain participants, events or elements (Grove *et al.*, 2015:270). The goal of purposive sampling is to gain in-depth information from information-rich cases (Grove *et al.*, 2015:270). The researcher purposefully selected women who came to the antenatal clinic for their first visit, as well as those who attended for their follow-up visits. The researcher sampled from the women present at the antenatal clinic on the day of data collection and interviewed midwives working in the antenatal clinic.

Sample size refers to the number of participants included in a study (Grove *et al.*, 2015:266). The sample size for the study was 14 participants, which consisted of 12 pregnant women and two midwives. The pregnant women were sampled according to their type of appointment. Six pregnant women were chosen who arrived for a follow-up visit, and six pregnant women were chosen who arrived for their initial booking appointment. The antenatal clinic process is different for a woman with a follow-up appointment than a woman with a booking appointment. Thus, the sample for the pregnant women were divided into two sub-categories. There were four midwives working in the antenatal clinic. Two of the midwives declined to participate in the study, and the other two consented to participate in the study. Figure 3.5 presents the sampling framework. Data saturation was reached after 10 interviews with the pregnant women. According to Grove *et al.* (2015:274), data saturation occurs when no new information is obtained, and there is a repetition of previously collected data.

3.4.3 Inclusion criteria

The inclusion criteria for the participants were:

- Pregnant women between 15 and 49 years old who were attending the antenatal clinic for booking and follow-up appointments.
- Midwives who were working in the antenatal clinic at the Gugulethu MOU.

Gugulethu has a diverse population with different cultures, languages and educational backgrounds. Pregnant women with diverse backgrounds were included in the study. There were no exclusion criteria.

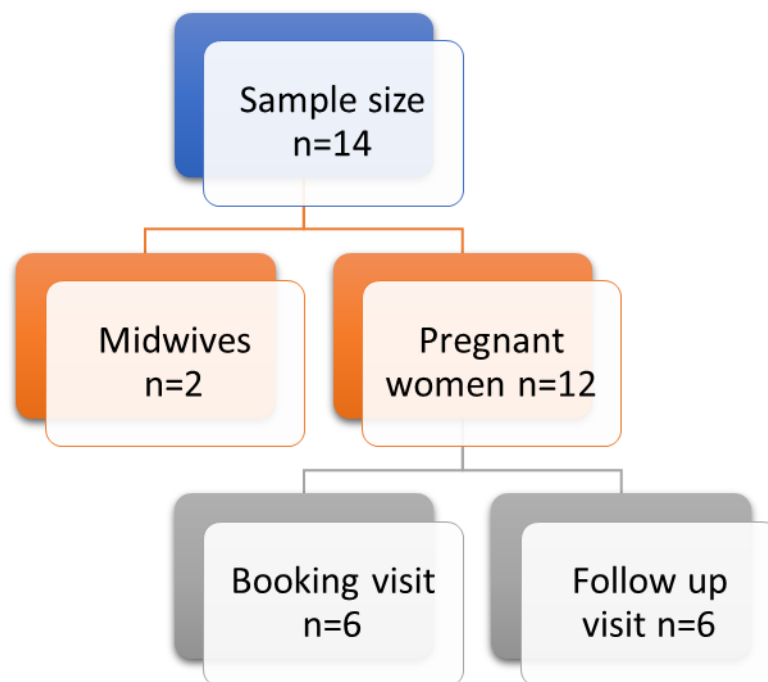


Figure 3.5: Sampling framework

3.5 Data collection tool

Two semi-structured interview guides, based on the research objectives, were used for data collection. One interview guide was for the pregnant women, and the other interview guide was for the midwives working in the antenatal clinic (see Appendix 4 and 5). The interview guide for the pregnant women consisted of demographic information and open-ended questions, with probes related to the workflow, waiting times, barriers to the waiting times and ANC attendance. The interview guide for the midwives consisted of demographic information and open-ended questions, with probes related to the workflow in the antenatal clinic, barriers to waiting times, ANC utilisation and facilitators of waiting times in the clinic.

3.6 Pilot interview

According to Brink *et al.* (2012:56), a pilot study is a smaller version of the larger study. Two pilot interviews were conducted by the researcher. The pilot interviews were critical in refining and improving the researcher's interviewing skills, and allowed the researcher to adapt the interview tool to meet the objectives of the study.

One interview was conducted with a pregnant woman who had a follow-up appointment and the other interview was with a midwife working in the antenatal clinic. Prior to the pilot interviews, consent was obtained from the participants. The interviews were held in a private room in the antenatal clinic. The pilot interview with the pregnant woman took place after she had completed her antenatal clinic visit. The researcher observed the woman throughout her ANC visit noting the activities that were performed, the patient flow and the waiting times. The researcher's observations were documented on a writing pad as field notes. The interview with the midwife took place during her lunchtime. Both interviews were audio-recorded and participants were given refreshments during the interviews. After the interview, the participants were thanked for their time and given a token of appreciation.

The researcher's supervisor assessed the researcher's interviewing skills and provided feedback regarding the pilot interview. The feedback from the supervisor was that the interview guides should not be changed; more probing needed to be done with regard to the barriers to waiting times. The feedback was incorporated in the interviews that followed. The pilot observation allowed the researcher to focus on certain aspects related to the research objectives. The data from the pilot interviews were analysed and added to the study's main findings.

3.7 Trustworthiness

Rigour in qualitative research is "associated with openness, scrupulous adherence to a philosophical perspective, thoroughness in collecting data and consideration of all the data in the subjective theory development phase" (Burns & Grove, 2001:64). Trustworthiness is the vehicle for ensuring rigour in qualitative research (Brink *et al.*, 2012:172). The criteria for trustworthiness are credibility, dependability, transferability, and confirmability (Brink *et al.*, 2012:172). These criteria are discussed next.

3.7.1 Credibility

Credibility refers to the assurance of the truthfulness of the data and its interpretation (Polit & Beck, 2010:492). According to Baxter and Jack (2008:556), who cites Russell, Gregory, Ploeg, DiCenso and Guyatt, trustworthiness in case studies can be achieved through a clearly written research question and propositions that are adequately substantiated, purposeful sampling, systematic data collection and management, and proper data analysis techniques.

The researcher invested sufficient time at the Gugulethu MOU so that rich data could be obtained to ensure that the objectives of the study were met. Data collection occurred from 25th of July to the 3rd of October 2019. On the days of data collection, the researcher arrived

at the antenatal clinic between 06:45-07:00. After a participant was recruited, the researcher engaged in continuous observation of the activities, patient flow and occurrences in the antenatal clinic. Field notes were written throughout the observation process so that important information was not forgotten. This added to providing a thick, rich description of the organisational functioning and waiting times.

According to Lincoln and Guba (1985:305), triangulation is a mode of improving the possibility that the study's findings and interpretations will be found credible. Triangulation is "the use of multiple and different sources, methods, investigators and theories" (Lincoln & Guba, 1985:305). For this study, the researcher used three different sources of information, namely the pregnant women, the midwives, and the data obtained through observation. Triangulation during data collection provided different perspectives on the waiting times, the barriers to waiting times, and ANC utilisation to provide information-rich data.

The researcher conducted interviews with pregnant women until data saturation occurred. Data saturation was reached after 10 interviews with the pregnant women. Thereafter, two additional interviews were conducted in order to confirm data saturation. There were four midwives working in the antenatal clinic, and two consented to participate in the study. Therefore, data saturation among the midwives' interviews was not reached.

During the interviews, the researcher used open-ended questions and probing words and phrases to obtain more information about the questions posed. Throughout the interviews, the researcher summarised and reflected on the information that was given so that more information could be obtained and to ensure that information from the participant was correctly understood.

After the interviews, the audio recordings were transcribed verbatim by a transcriptionist. The researcher listened to the audio recordings together with the transcripts to ensure accuracy.

Peer debriefing is a means of assuring credibility, and was done with the researcher's academic supervisor (Brink *et al.*, 2012:172). The researcher's supervisor reviewed the study's methodology, data collection, and data analysis techniques and provided constructive feedback.

Once data analysis was completed, the analysed data were compared against the raw data to ensure that the authentic experiences and perceptions of the participants were captured.

Member checking was done to ensure the authenticity of what was said in the interview. Member checking is when the study findings are taken to the participants to be discussed and

confirmed (Brink *et al.*, 2012:172). Member checking could not be done with all the study participants; all the participants were contacted, but only three participants could be reached. The three participants confirmed the findings of the study. Member checking was also done during the interviews, where the information was continually summarised, and the participants were asked if the researcher's understanding of what was said is correct.

3.7.2 Dependability

Dependability signifies the constancy of data over a period of time (Brink *et al.*, 2012:173). Brink *et al.* (2012:172) further elaborate that dependability refers to the extent to which similar study findings can be reproduced under similar conditions. The techniques applied to ensure credibility have a direct impact on dependability (Brink *et al.*, 2012:173). Without dependability, credibility cannot be achieved (Brink *et al.*, 2012:173).

Dependability was ensured by the researcher in providing clear and accurate records of the research process. The researcher's supervisor oversaw and provided feedback regarding the study's activities and the research process. The interviews conducted with pregnant women were consistently implemented according to the interview tool and the same applied to the interviews conducted with the midwives. The researcher's observations were also documented as field notes.

3.7.3 Confirmability

According to Polit and Beck (2010:492), confirmability is the potential for similarity between two or more individuals regarding the data's accuracy, relevance or meaning. Confirmability is concerned with determining whether the data is congruent with what the participants have stated (Brink *et al.*, 2012:173).

The audio recordings and transcripts were sent to the researcher's supervisor for verification. Transcripts were compared to the audio recordings to ensure the accuracy of the transcripts. The researcher became familiar with the data by repeatedly reading through the transcripts and listening to the audio recordings. The familiarisation with the data assisted the researcher in portraying the participants' authentic experiences and perceptions.

The researcher verified the analysed data with the original transcripts to ensure congruence. An audit trail of the research study was kept and included the raw data, reduced and analysed data products, reconstructed and synthesised data products, process notes and field notes.

During the interviews, the researcher summarised, reflected and clarified what was said to ensure that the researcher understood what the participant had said. After the data were

analysed, the researcher contacted the participants and confirmed the accuracy of the analysed data.

3.7.4 Transferability

Transferability is the “ability to apply the findings in other contexts or to other participants” (Brink *et al.*, 2012:173). The researcher used purposive sampling so that specific information about a context could be obtained. This ensured that detailed information could be retrieved from the participants. The study participants were selected according to the inclusion criteria. The researcher conducted interviews with the pregnant women until data saturation had been reached, which ensured that all the relevant information from the participants’ perspectives were obtained. The research findings were documented in a way that provides detailed descriptions so that readers can make their own judgments about transferability. The study findings were compared with other studies to determine the differences and similarities of the findings.

3.8 Data Collection

Data collection is a process of gathering data from preselected subjects (Burns & Grove, 2001:460). Research data may be collected through observation, testing, measuring, questioning, recording or any combination of these methods (Burns & Grove, 2001:460). Data collection commenced on the 25th of July 2019 to the 3rd of October 2019 after ethical and institutional approval was granted.

3.8.1 Unstructured Observation

Descriptive data regarding the layout and functioning of the antenatal clinic in the Gugulethu MOU was obtained through an unstructured observation. Observation is a data-gathering method that aims to obtain first-hand information in a real-life situation (Grove *et al.*, 2015:86). Unstructured observation encompasses the collection of descriptive information where the researcher tries to describe events or behaviours in a real-life situation without preconceived thoughts or ideas on what the researcher may see (Brink *et al.*, 2012:150). During the observation, the researcher wrote field notes to avoid important data not being recorded. According to Grove *et al.* (2015:86), any notes taken during or shortly after observation is called field notes.

The physical layout of the antenatal clinic within the Gugulethu MOU was documented as a diagram to illustrate the structure of the MOU. The researcher observed the workflow and documented the activities that were performed during the daily clinic operation. This enabled

the researcher to understand the path that women go through during their antenatal clinic visits.

On the days of data collection with the pregnant women, the researcher arrived at the clinic between 06:45 and 7:00. The researcher first recruited women for follow-up appointments. One participant was observed and interviewed per day due to the intensity and length of the observation. The researcher recruited women attending the antenatal clinic for their follow-up appointments from the reception in the antenatal clinic soon after they arrived. The first woman to agree to participate in the study was recruited. The women who arrived for their initial booking visit were seated in the first two rows of chairs in the clinic. The researcher would start at the front of the row to recruit participants. The first woman to agree to participate in the study was accepted.

The participants were given detailed information about the study as well as the participant information leaflet, and verbal consent was obtained. The researcher followed the participant as she went about her antenatal clinic visit. During the observation, the researcher wrote field notes of the waiting times, the activities and procedures that the women underwent and the duration of the consultation and contact times.

3.8.2 Semi-structured Interviews

Prior to the commencement of data collection, the researcher underwent training in qualitative interviewing skills. The interviews were conducted in an unused, private room in the antenatal clinic.

The interviews with the pregnant women were held after their ANC visit. Prior to the interview, written informed consent was obtained. This provided the women with an opportunity to withdraw from the study if they were too tired after their antenatal clinic visit. No participants withdrew from the study.

The four midwives working in the antenatal clinic were given the participant information leaflet along with a verbal description of the study. Two of the midwives declined to participate in the study. Appointments for the interviews were scheduled at the midwives' convenience and did not disrupt operational functioning. Prior to the interviews, written informed consent was obtained. The women and midwives were informed that if they should feel they no longer wish to participate in the study at any time, they may discontinue from the study without any repercussions. The researcher's contact details were pointed out on the participant information leaflet, so that they could contact the researcher should they wish to withdraw from the study.

Data were collected from the pregnant women and midwives via a semi-structured interview. The researcher used a semi-structured interview tool that consisted of open-ended questions and probes that elicited specific data and insights of the study's objectives. Two separate interview tools were used; one tool for the midwives and one tool for pregnant women. During the interviews, the researcher summarised and reflected on the information that was given. This elicited further conversation and provided the researcher with an opportunity to confirm the accuracy of the information.

The participants were assigned codes (e.g. participant 001) which were used to distinguish the audio recordings. A master list of the participants' names and their assigned codes was created. All the audio recordings and the transcripts were saved and password protected on the researcher's personal computer.

The interviews were conducted in English, as all the participants could understand and speak English. The interviews lasted approximately 30-60 minutes. During the interview procedure, the participants were given refreshments, and after the interview the participants were thanked for their time and received a token of appreciation. Data collection of the interviews occurred from the 14th August to the 3rd of October 2019.

3.9 Data Analysis

Qualitative data analysis is the "integration and synthesis of non-numeric data that are reduced to themes and categories with the aid of a coding procedure" (Brink *et al.*, 2012:58). The framework method for analysing qualitative data was used to analyse the collected data. The framework method "provides clear steps to follow and produces highly structured outputs of summarised data" (Gale *et al.*, 2013:2). This method was chosen because it is suitable for data that covers similar key issues and is commonly used for thematic analysis of semi-structured interview transcripts (Gale *et al.*, 2013:2). According to Gale *et al.* (2013:4-5), the procedure for data analysis is as follows:

- ❖ Transcription
- ❖ Familiarisation with the interview
- ❖ Coding
- ❖ Developing a working analytical framework
- ❖ Applying the analytical framework
- ❖ Charting data into the framework matrix
- ❖ Interpreting the data

The data analysis steps are discussed in detail in the sections that follow.

❖ **Transcription**

Transcription of the audio recordings is capturing the participant's own words, language and expressions verbatim (Grove *et al.*, 2015:88). The researcher transcribed the two pilot interviews on the day after the interviews were conducted. The researcher first listened to the audio recordings. Thereafter, speech-to-text software was used to transcribe the interviews. The transcripts had large margins and 1.5 line spacing to allow for the addition of notes and codes. The researcher repeatedly listened to the transcripts with the transcribed text and made adaptations according to the audio recording until the transcripts were exactly the same as the audio recording.

As the remaining interviews were completed, the audio recordings were sent to a professional transcriptionist. The remaining 12 audio recordings were transcribed verbatim by the transcriptionist. On receipt of the transcripts, the researcher compared the transcripts with the audio recordings and made adaptations where applicable. The researcher's supervisor then verified the transcripts and audio recordings.

❖ **Familiarisation with the interview**

The researcher listened to the audio recordings and read the transcripts to ensure the accuracy of the transcripts and to become familiar with the data, before, during and after the transcripts were received.

❖ **Coding**

Coding is a process of reading the data, breaking it down into smaller parts and labelling that part of the text (Grove *et al.*, 2015:89). A code is a symbol or abbreviation used to classify data (Grove *et al.*, 2015:89). The researcher read the transcripts line by line and applied a code/codes to the data that was important in meeting the objectives of the study. The researcher also coded meaningful statements that contributed to a vivid description of the participants' experiences. Coding was done so that the data could be classified and systematically compared with the other data sets (Gale *et al.*, 2013:4). Coding the data line by line allowed the researcher to identify hidden themes that were not overtly expressed, and this strengthened the data analysis process.

❖ **Developing a working analytical framework**

Following the coding of the first few transcripts, the researcher decided on a set of codes that were applied to the rest of the transcripts. Where new information was found, the statements were coded, and the code was added to the list of codes. The similar codes were grouped

together into categories and clearly labelled. This formed the basis of the working analytical framework.

❖ **Applying the analytical framework**

The application of the analytical framework was done by categorising the subsequent transcripts using the existing categories and codes. Each code was assigned a number so that the full names of the codes did not need to be written out each time the code was used. Only the number for the code was written on the transcript where appropriate. This was an effective means of storing and organising the data for further analysis.

❖ **Charting data into the framework matrix**

Summarising and reducing the data is an important aspect of data analysis (Gale *et al.*, 2013:5). A spreadsheet was used to create a template so that the data could be added into the spreadsheet. All the codes from the pregnant women were combined into one spreadsheet, and the duplicate codes were removed. The same process was applied for the midwives' codes. For the pregnant women, four major themes were evident and the codes were grouped according to these themes. Similarly, with the midwives, three themes were evident and the data were grouped according to these major themes. In both data sets, the codes under the major themes were further categorised until they were exhaustive categories which formed the subthemes but also addressed the research objectives. The transcripts were read again and compared with the final themes and subthemes that emerged from the data. This ensured congruence of the coding, themes and subthemes with what the participants stated. The spreadsheet with the themes and subthemes was sent to the researcher's supervisor for assessment.

❖ **Interpreting the data**

During interpretation, the researcher contemplated the findings and attempted to place them into a larger context and linked the different factors in the findings to each other (Grove *et al.*, 2015:89). Interpretation focuses on the usefulness of the findings for clinical practice and answers the question "what do the findings mean?" (Grove *et al.*, 2015:89).

The data from the interviews were interpreted separately, according to pregnant women's perspectives and the midwives' perspectives. The researcher interpreted the findings and placed them into context according to the study's objectives and provided a narrative description of the results. The researcher's interpretation of the data was substantiated using the participants' verbatim quotations.

3.9.1 Observational Data

The results from the observation were described in a narrative summary. The floor plan of the MOU was illustrated by means of a diagram. A narrative description of the work activities for an initial booking visit and a follow-up visit was done. Each participant's patient flow was described in the narrative, together with their waiting times. A table was created in which to map each participant's antenatal clinic flow as well as the activities they underwent. Included in the table was a breakdown of the participants' waiting times. The waiting times were categorised into contact time, waiting time and total time spent at the facility.

The researcher's field notes were also analysed and the similarities, with the participants' perspectives, were highlighted and used to further reiterate what the participants stated. This increased the validity of the findings.

The transcripts were in electronic format and therefore data analysis was done electronically. The transcripts, coded transcripts, audio recordings and the framework matrix were stored in the researcher's personal computer on a cloud drive. The folder containing all the files is password protected. The field notes, notes made during the analysis, the master list of the participants' contact details and consent forms were stored in a locked drawer in the researcher's home. The digital audio recordings were labelled with the code assigned to each participant to maintain confidentiality.

3.10 Ethical Considerations

Conducting research in an ethical manner from the conceptualisation of the research to dissemination of the research should be the researcher's ultimate goal (Brink *et al.*, 2012:32). Failure to produce ethically sound research will undermine the scientific process and result in untoward consequences (Brink *et al.*, 2012:32).

Prior to the commencement of the research study, approval for the study was obtained from the Human Research Ethics Committee (HREC) of Stellenbosch University on the 29th of April 2019 (reference number S18/08/159). Written permission to conduct the study was requested from the Provincial Research Committee and management at the Gugulethu MOU prior to commencement of the study (reference number WC_201810_033). Institutional approval was granted on the 11th of July 2019. Copies of all the approval letters are presented in the appendices. The ethical principles are discussed next in relation to the research study.

3.10.1 Autonomy

Autonomy has its roots in the human right of self-determination (Grove *et al.*, 2015:101). Autonomous agents have the freedom to manage their lives as they choose without external controls (Grove *et al.*, 2015:101).

Individuals could participate in the study after informed consent was granted. The informed consent described the purpose of the study, the potential risks/benefits, the right to confidentiality and the right to withdraw at any time during the study without any repercussions. Individuals were informed that they were not obligated to participate in the study and that participation in the study was voluntary. The participants were taken through the information leaflet prior to them consenting to be a part of the study. Each participant was also given the information leaflet, with the researcher's contact details, to take home in the event of them at a later stage wanting to withdraw from the study. Written information regarding the study was provided to the participants. Participants were informed that the interviews would be audio-recorded, and a professional transcriptionist would listen to the interviews. This information formed part of informed consent.

The inclusion criteria of the study were pregnant women between 15 and 49 years old who were attending the antenatal clinic for booking and follow-up appointments, and midwives who were working in the antenatal clinic at the Gugulethu MOU. According to the Child Health Act, 38 of 2005, a child over the age of 12 years may consent if "the child is of sufficient maturity and has the mental capacity to understand the risks, benefits, social and other implications of treatments". However, in the research context, "anyone under the age of 18 years may not choose independently to participate in research; a parent or guardian must give permission for the minor to choose" (National Department of Health, 2015). All the participants in the study were 18 years and older.

3.10.2 Privacy and Confidentiality

Privacy refers to the freedom that individuals have to decide when, to what extent, and under which circumstances their private information will be shared or withheld from other people (Grove *et al.*, 2015:105). Grove *et al.* (2015:105) further elaborate that private information encompasses a person's attitudes, beliefs, behaviours, opinions, and records.

The researcher protected the participants' right to privacy by informing them that raw data would not be shared with anyone. Only the researcher and the researcher's supervisor had access to the raw data. The participants were informed that a research report that contains the study's findings would be shared with interested parties; however, no identifiable details

would be contained in the research report. The interviews were conducted in a private room in the antenatal clinic, which provided the participants with the opportunity to speak freely.

Confidentiality is the researcher's management of private information, shared by a subject, that must not be shared with others without authorisation from the subject (Burns & Grove, 2001:201). The participants' confidentiality was protected by assigning a code to each participant. During data collection, personal details of participants were not reflected on documentation; only the participant's assigned code. Participants' names were thus not mentioned in the audio recordings. Instead, the researcher commenced the interview by stating "interview of (participant's code, e.g. 001)". This ensured anonymity throughout data collection, data analysis and the research report.

The researcher kept a master list of the participants' names with their assigned codes next to it. The master list, together with the informed consent forms, was kept separately from the study's data in a locked cupboard. All the documents related to the study, which includes the master list, consent forms, field notes, transcriptions, audio recordings and analysed data, will be kept for 5 years. A professional transcriber was used and was asked to sign a confidentiality agreement before the audio recordings were transcribed.

3.10.3 Justice

The ethical principle of justice encompasses the right to fair treatment (Burns & Grove, 2001:202). The ethical principle stipulates that each person should be treated equally and receive what is owed to them (Burns & Grove, 2001:202).

Participants who complied with the inclusion criteria for the study could participate in the study. The interviews were conducted at the Gugulethu MOU, in a private room, and the researcher did not interfere with the clinic's operational functioning.

3.10.4 Beneficence and Non-Maleficence

Beneficence entails the prevention of harm, the removal of harm, and the promotion of good (Pera & van Tonder, 2013:55). Non-maleficence refers to not intentionally inflicting harm (Pera & van Tonder, 2013:55).

The researcher established rapport with the participants before the commencement of the interviews to make them feel more comfortable. The interviews were conducted at the Gugulethu MOU in a safe and private room. The researcher provided the participants with refreshments during the interview. The researcher conducted the interview in casual clothes to prevent a power dynamic from occurring.

The participants were informed before the commencement of the interview that participation is voluntary, and should they feel they no longer want to participate in the study, they may leave without repercussions. Participants were not coerced into participating in the research. Coercion is when “overt threat of harm or excessive reward is intentionally presented by one person to another in order to obtain compliance” (Burns & Grove, 2001:196).

On completion of the interviews, the participants were thanked for their participation in the study and a token of appreciation, to the value of R50, was given to each participant for their time.

3.11 Summary

The aim of the study was to explore and describe the activities in the antenatal clinic that influence waiting times and the utilisation of antenatal services. A qualitative research design was used with a single, type 2 case study approach to achieve the objectives of the study. Purposive sampling was used, and data were analysed using the framework method. The integrity of the research was ensured by following the ethical principles as a guideline and ensuring the trustworthiness of the research process. In the next chapter, the findings of the study will be discussed.

3.12 Conclusion

The methodology of a study is important as sound methodology paves the way for good quality research. The research design provides the blueprint for the implementation of the study and offers a guideline for ethical research. The methodology creates synergy with the results of the study, thus creating a flowing research report.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

In Chapter Three, a detailed discussion of the study's methodology was described. This chapter will focus on presenting the research findings. The single case study with multiple units of analysis was used to understand the phenomenon of waiting times for the pregnant women in the Gugulethu MOU. Data were collected using three data collection methods which included the researcher's observation of the workflow, and interviews with the midwives and pregnant women who attended the antenatal clinic at the Gugulethu MOU. The interviews were recorded and transcribed verbatim, and the data were analysed using the framework method.

The research findings were analysed according to three embedded units of analysis. The first is the observation of waiting times and the workflow in the antenatal clinic. The second unit of analysis is the perspectives of the pregnant women on waiting times and ANC utilisation; and the third is the midwives' perspectives on improving waiting times. The research results are described under the sections 'demographical details' and 'embedded units of analysis'.

4.2 Demographical details

The participants for the study were recruited from the antenatal clinic at the Gugulethu MOU. A total of 14 participants were recruited and interviewed using a semi-structured interview guide. Two pilot interviews were conducted and included in the data of the 14 recruited participants. The pilot interviews were included as there were no major changes in the interview guide, which could have influenced the data. Twelve of the participants were pregnant women attending the antenatal clinic. Six of the pregnant women had their follow-up visits and the other six attended the antenatal clinic for their first visit (booking visit) or were referred from a surrounding BANC site. Two participants were midwives working in the antenatal clinic at the MOU. There is a total of four midwives working in the antenatal clinic. The other two midwives were approached but declined to be interviewed. The demographic information obtained during the interviews is discussed next.

Participant one was a 38-year-old woman originally from the Eastern Cape. At the time of data collection, she was in a long-term relationship. Her highest level of education was grade 12. She had completed a course in home-based care. She was 19 weeks' gestation with her fourth

pregnancy. In 2007, her first-born baby passed away. She had two remaining children (Pilot participant 1).

Participant two was a midwife who had been working at the Gugulethu MOU for the past 20 years. She had experience working in the labour ward and in the antenatal clinic. She was a Nurse Initiated Management of Antiretroviral Treatment (NIMART) trained midwife who enjoyed assisting women during the birthing process (Pilot participant 2).

Participant three was a 21-year-old woman from Zimbabwe. She relocated to Cape Town from Johannesburg. She was a primigravida at 40 weeks' gestation. She started ANC when she was at 20 weeks' gestation.

Participant four was a 24-year-old woman from Zimbabwe. Her highest level of education was grade 12. She had been in a relationship for 13 months and was engaged to be married. She was referred from the Retreat MOU to the Gugulethu MOU as she resided in Philippi at the time of data collection. She was a primigravida at 38 weeks' gestation. She started attending ANC when she was 12 weeks pregnant.

Participant five was a 23-year-old woman from Malawi. Her highest educational level was grade 10. She was employed at a grocery store in Cape Town, and had been in a stable relationship since 2017. She was 13 weeks' gestation with her second pregnancy. Her first-born child was in Malawi with her mother.

Participant six was a 31-year-old woman who lived in Nyanga. She was born in Cape Town but also lived in the Eastern Cape for seven years. In 2008, she relocated back to Cape Town. She completed grade 12 in the Eastern Cape. She had been in a relationship for the past three years at the time of data collection. She was 24 weeks pregnant with her third pregnancy, and her two children were living with her.

Participant seven was an 18-year-old single woman. Her highest level of education was grade 11. She was no longer in school; however, she planned to resume her schooling. She was a primigravida at 37 weeks' gestation. She was referred from one of the surrounding BANC sites to Gugulethu's antenatal clinic.

Participant eight was a 31-year-old woman who had been in a relationship for the past four years at the time of data collection. She had completed grade 11 and was busy completing her senior certificate at a local college. She was referred from one of the surrounding BANC sites to the Gugulethu MOU. She was 35 weeks' gestation in her third pregnancy. She had one child and terminated a previous pregnancy.

Participant nine was a 21-year-old woman who was in a long-term relationship. She had completed grade 12 in 2017. She applied to further her education at higher education institutions, but her applications were unsuccessful. She joined Youth at Work, an initiative of the Desmond Tutu Legacy Foundation, in order to improve her skills. Since then she completed a certificate in office administration and was working as an intern at a non-profit organisation. She was a primigravida who came for her first ANC visit.

Participant ten was a midwife working in the antenatal clinic at the Gugulethu MOU. She had been a midwife for four years. She completed her community service in Mowbray Maternity Hospital and had been employed at the Gugulethu MOU for the past three years at the time of data collection. At the time she had yet to complete a diploma in Advanced Midwifery.

Participant eleven was a 46-year-old woman. Her highest educational qualification was grade 12. She was employed as a cleaner for a cleaning company and had been in a relationship for the past ten years. She was 20 weeks' gestation with her sixth pregnancy. She had four children and had a previous miscarriage. This was her first ANC visit for this pregnancy.

Participant twelve was a 33-year-old woman. In 2008 she received her senior certificate. She did not pursue further education at higher education institutions; instead, she went to work for her family. She was employed at a call centre and at a security company. She was part of a learnership for five months at a library to improve her skills. She attended her first ANC visit for her third pregnancy. She had one child and had a miscarriage in previous years.

Participant thirteen was a 25-year-old woman who had been a pastry chef for three years at the time of data collection, and worked at a hotel in Claremont. She completed a certificate in professional cookery then obtained a diploma in pastry as well as an international diploma in professional cooking. She had been in a relationship for four years. She was four weeks' gestation with her second pregnancy. She had a miscarriage at 16 weeks with her previous pregnancy. This was her first ANC visit for this pregnancy.

Participant fourteen was a 19-year-old woman. She completed her grade 10 in Cape Town then relocated to the Eastern Cape. There she completed grade 11. She returned to Cape Town and was completing grade 12. She had been in a relationship for the past seven months at the time of data collection. This was her first pregnancy and her first ANC visit for the pregnancy.

4.3 Description of the data

This was a single case study with three units of analysis, which included the observation of waiting times as unit of analysis one, the perspectives of the pregnant woman on the influence of waiting times on utilisation of ANC, and the perspectives of midwives on waiting times and utilisation of ANC.

4.4 Embedded unit of analysis one: Waiting times in the ANC

The results for the 'waiting time' unit of analysis was achieved through unstructured observation. This unit of analysis encompasses the layout of the MOU, a description of the work and workflow, as well as a description of the waiting times for follow-up appointments and booking appointments.

4.4.1 Layout of the MOU

The MOU is on the premises of the Gugulethu Community Health Centre and is managed by the municipality. However, it is a separate building from the Community Health Centre and is managed by midwives. The MOU can be divided into two sections. The one section comprises of the labour ward, where women are admitted in early labour until they are discharged during the post-partum period. The second section is the clinic, which is situated on the opposite side of the labour ward. The clinic mainly offers ANC, however, there is a room where women have postpartum follow-up care for their new-borns.

The MOU has one central reception (room 1 on the floor plan) with patient windows on the MOU side and the antenatal clinic's side. The clinic has four lavatories (room 2) allocated for the patients. There are four counsellor rooms (rooms 3, 4, 5 & 6) that are predominantly used by the HIV counsellors. There are four cubicles (rooms 8, 9, 10 & 11) that are used by the midwives for their consultations. There is a seminar room (room 7) which is used for antenatal clinic activities. The breastfeeding room is where patients come to the baby clinic. The waiting area is filled with chairs and benches. The benches are arranged along the walls, and rows of chairs occupy the rest of the waiting area. See Figure 4.1 for the floor plan of the antenatal clinic.

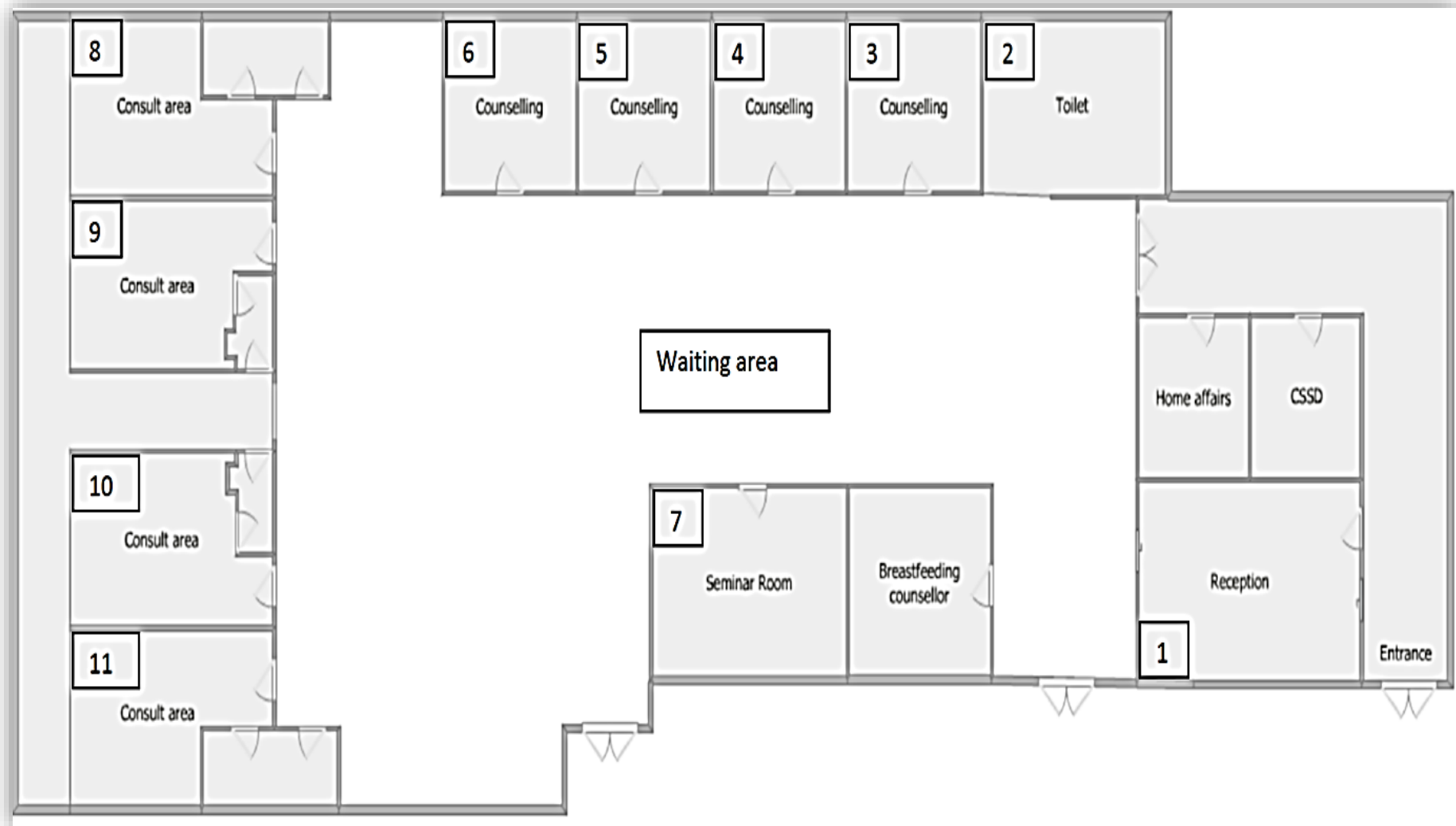


Figure 4.1: Floor plan of the antenatal clinic

4.4.2 Antenatal care activities

4.4.2.1 Booking appointment work activities

Midwives inform the women to arrive early at the clinic. The first two rows of chairs are reserved for the women who have been referred from BANC sites and for the women who have come for their initial appointments. A midwife reads the names of the women who have been booked for the day, to determine which of the booked women has come for their appointment and to determine the number of new patients. A maximum of 30 new patients can be reviewed for an initial booking appointment. Once the number of new patients has been established and it is less than 30, the women without appointments have the opportunity to write their names on the list with the new patients' names. Should there be more than 30 new bookings, the women are triaged to determine who needs to be booked more urgently. The remainder of the women receive the next available appointment date for their first ANC visit and leave the MOU. The 30 new clients are given their maternity case records (MCRs).

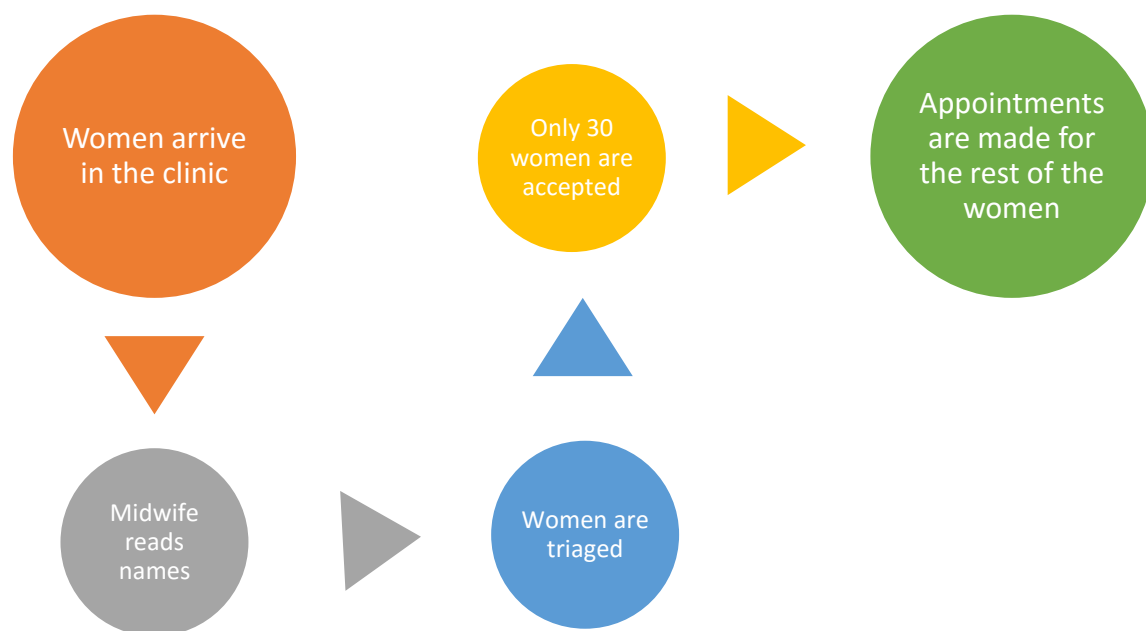


Figure 4.2: Initial new booking process

Once the daily logistics have been completed, the midwife gives a health talk in the waiting room. Thereafter, the breastfeeding counsellor addresses the women in the waiting room to educate them about exclusive breastfeeding, kangaroo mother care, nutrition during pregnancy and the postpartum period, mom connect and the importance of a birth companion.

While the health talks are in progress, the women are receiving their ANC procedures. There is no set order in which the procedures are done; instead, it depends on the availability of the healthcare workers.

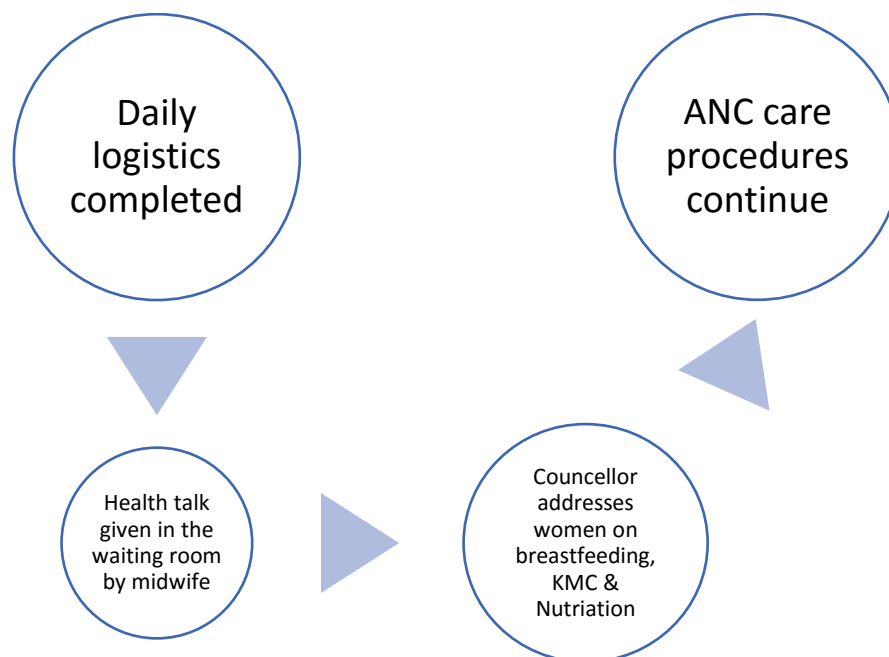


Figure 4.3: ANC process

The women are informed that the queue for the lavatory should not be longer than 10 women. The women are given 'flasks' into which they urinate (room 2). The nurse does a urine analysis with a urine dipstick, and the women are weighed and their height is measured (room 2). The urine analysis result, weight and height are documented on a piece of paper and given to the woman. One of the counselling rooms is used by the nurse to take the women's blood pressure and haemoglobin (Hb) (room 4). Two of the counselling rooms are occupied by the HIV counsellors (rooms 3 & 4, and sometimes 5). The counsellors do pre-counselling then conduct the HIV test. Once the results are available, the counsellor informs the woman of her HIV test result and provides her with post-counselling. During the ANC process, one of the clerks from reception collects the new patients' identity documents or passports (room 1). The clerk makes photocopies of the identity documents/passports and returns the original documents to the women. The women are called in groups of five to the reception to open a folder.

At the reception window, the woman's MCR is requested. The copy of the woman's identity document or passport is inserted into a blue folder together with a green document. The MCR is given to women to keep. With every ANC visit, they must have their MCR with them. It contains all their pregnancy-related information and is used until the postpartum period. Once the woman is discharged from maternity care services, the book will remain in the healthcare

facility. The 'green document' is a duplication of some of the information in the MCR. This document remains in the folder at the healthcare facility. Patients often lose their MCRs, it gets destroyed in fires, or they are robbed, and their MCR was in the bag that was stolen. The clerk requests demographical details from the women, such as next of kin, employment status, contact numbers etc., and documents the details on the blue folder. The clerk stamps the MCR and the blue folder with the facility's stamp and issues the women with an appointment card.

Once the folders are completed, the clerk delivers the folders to the seminar room (room 7). The new patients are called to the seminar room by the nurse, and the woman's obstetric, medical, surgical, social and family history is obtained and documented on the ANC record in the MCR. See Appendix 11 for an example of the ANC record. The mid-upper arm circumference (MUAC) is also done. The women are given their folders to keep with them until they see the midwife.

The women are called to the midwife's consultation area to have their blood drawn (rooms 8, 9, 10, 11). Women cannot have their blood drawn unless they have their HIV results as this determines the number of blood tubes that will be drawn and which tests will be requested. Once the blood sample has been collected the women are given their blood tubes and are informed to hand them in at the seminar room.

At the seminar room (room 7), if the room is not occupied by another patient, a woman can hand in her blood samples to the nurse. The nurse attaches stickers to the blood tubes and completes the blood request forms. The blood is placed in a plastic sleeve and placed in a cooler box to be taken to the laboratory once all the patients' blood samples are collected.

Once all the antenatal activities are completed, the women can proceed to the consultation with the midwife (rooms 8, 9, 10 & 11). The new patients are only seen once all the follow-up appointment patients have been attended to. During the midwife's consultation, a physical examination is done and abdominal palpation. Depending on the gestation of the foetus, the symphysis fundus measurement (SFM) will be done and auscultation of the foetal heart rate. A pregnancy test may be requested by the midwife if the woman is suspected to be of very early gestation. The midwife calculates the expected date of delivery, completes the green document and the MCR. The midwife provides the woman with vitamins and health education about the medication. A follow-up appointment is made and written on the appointment card, which is given to the woman. The folders remain with the midwives.

This concludes the activities for an initial booking patient and for new patients who were referred from the surrounding BANC sites.

4.4.2.2 Follow-up appointments work activities

There are different types of follow-up appointments. Such appointments can consist of an ultrasound appointment, results appointment, oral glucose tolerance test appointment, and the routine ANC follow-up appointment. Women who arrive at the clinic for a follow-up visit first report to the reception window in the antenatal clinic (room 1). At the reception window there is a stack of numbers, arranged in chronological order. A woman takes a number from the top of the stack and attaches the number to her appointment card with a paper clip, also found at the reception window. The woman then leaves her card with the attached number at the reception window.

The clerks retrieve the folders of the women who placed their cards at the window. Once all the folders are retrieved, they are placed into chronological order before being taken to the midwives (rooms 8, 9, 10 & 11). The women who arrive for an ultrasound appointment have their folders handed to them so that they can report to the ultrasound department next to the MOU. There is no set order in which antenatal activities occur. The women who arrive for follow-up appointments are seen first and are required to have their ANC activities done before the new patients, but this is not always the case.

The nurse requests 10 follow-up patients at a time to report to the lavatory where the urine analysis is done, and the weight of the woman (room 2) is taken. The woman also reports to the counselling room where her blood pressure is checked (room 4). The Hb of the follow-up patients are not routinely done; the Hb is only done routinely in HIV-positive women and women who have low Hb levels.

Once all the ANC activities are completed, the women may proceed to the midwives for their consultation (rooms 8, 9, 10 & 11). The midwives call the names of the women according to the order of the folders. During the midwife's consultation, abdominal palpation is done, the symphysis fundus measurement is done and auscultation of the foetal heart rate. Women receive pregnancy vitamins if their vitamins are finished. The woman is educated about delivery preparedness and danger signs and symptoms. The midwife documents her findings in the MCR and provides the woman with a follow-up appointment on the appointment card. The woman receives her folder, which she drops off at the reception on her way out of the MOU (room 1).

For those women attending the MOU to receive test results, the midwives call the patients according to their folder numbers. The results are given to the woman along with her folder, which she hands in at the reception on her way home.

4.4.3 Waiting time observation

The participant waiting times were obtained through observation. The participants were informed that the researcher would be observing their movement throughout the ANC process. The researcher observed which ANC activities were done first and how long the woman took at each station. The researcher observed six new or booking patients and six follow-up appointment patients. The researcher's observation is presented in italics in the following section.

The waiting times were calculated and categorised into contact time, waiting time and total time spent at the facility. The waiting time was calculated by subtracting the contact time from the total time at the facility.

4.4.3.1 Follow-up visit observation

In the follow-up group, waiting times appeared to be shorter than in the initial booking visit group. The women attending the MOU for follow-up appointments waited from 105 minutes to 216 minutes. Table 4.1 provides a summary of the waiting times (See Appendix 9 for the follow-up appointment activities and waiting times).

Table 4.1: Waiting times for follow-up appointments

Participant 001	Participant 003	Participant 004	Participant 005	Participant 006	Participant 007
Contact time:	Contact time:	Contact time:	Contact time:	Contact time:	Contact time:
30 minutes	9 minutes	12 minutes	16 minutes	14 minutes	17 minutes
Waiting time:	Waiting time:	Waiting time:	Waiting time:	Waiting time:	Waiting time:
151 minutes	154 minutes	105 minutes	149 minutes	216 minutes	172 minutes
Total time at facility:	Total time at facility:	Total time at facility:	Total time at facility:	Total time at facility:	Total time at facility:
181 minutes	163 minutes	117 minutes	165 minutes	230 minutes	189 minutes

Participant 001 had an appointment to have an ultrasound done. The woman arrived at 06:45. The ultrasound department opened at 08:20 and the woman's ultrasound was done at 08:58. After the ultrasound the woman returned to the midwife consultation areas with the ultrasound results. The woman needed a referral to Groote Schuur hospital (GSH) for another ultrasound. The telephone was not immediately available to make an appointment at GSH. When the telephonic appointment was

made, the woman received a follow-up appointment and returned the folder to the reception at 09:47. (Observation one)

The participant had a total of 30 minutes' contact time, she spent 151 minutes waiting, and the total time spent at the facility was 181 minutes (3h+). The participant thus had a long waiting time. Ultrasound is a procedure required for every woman during pregnancy to estimate the gestation age and detect any abnormalities. A delay with the commencement of the ultrasound service and unavailability of the telephone resulted in time being wasted during this participant's antenatal clinic visit.

Participant 003 had an appointment for a routine follow up visit. The woman arrived at 07:05. Her urine analysis and weight were done at 07:08 and her blood pressure was done at 08:50. At 09:42 the woman was seen by the midwife, where an abdominal palpation, auscultation of the foetal heart and symphysis-fundus measurement (SFM) was done. The midwife documented the consultation and gave the woman a follow-up appointment. At 09:48 the participant returned the folder to reception. (Observation two)

The participant had nine minutes' contact time. She waited 154 minutes and spent a total of 163 minutes (2h+) at the facility. The participant had a long waiting time even though she spent less than three hours in the clinic. However, with coordinated workflow the waiting times can be reduced as her contact time was only nine minutes.

Participant 004 had an appointment for a routine antenatal care follow up. The participant arrived at the facility at 07:00. Her urine analysis and weight were done at 07:10. At 07:33 the participant had her blood pressure done, however the blood pressure machine (Dynamap) failed to give a reading. The machine needed to be charged. At 07:53 the participant's blood pressure reading was retaken. The participant was called by the midwife at 08:49. The SFM, abdominal palpation and auscultation of the foetal heart rate was done. The midwife documented the consult, gave the participant health education and pregnancy vitamins and gave a follow-up appointment. At 08:57 the participant handed in her folder at reception. (Observation three)

This participant had 12 minutes of contact time. She spent 105 minutes waiting and a total of 117 minutes (1h+) at the facility. The participant had an acceptable waiting time and spent a short time in the antenatal clinic. However, the improper use of the blood pressure machine

resulted in the procedure being duplicated. This constitutes workflow wastage and can have an influence on the waiting times.

Participant 005 had a follow-up appointment for results. The participant arrived at 06:00. Her urine analysis and weight were done at 07:05. At 07:52 the participant went to have her blood pressure reading taken however, no reading was done as the blood pressure machine was taken by another staff member. At 08:19 her blood pressure reading was taken. At 08:30 the midwife called the participant and gave her results. The participant appeared lost after her results were given. She asked the surrounding patients what she should do next. Thereafter, at 08:45 the participant went to the reception to hand in her folder. (Observation four)

The participant had 16 minutes of contact time, she waited 149 minutes and spent a total of 165 minutes (2h+) at the facility. The participant had a long waiting time, however, her time spent in the facility was acceptable. The participant should not have had her biometrics taken as her appointment was for her blood results; this constitutes unnecessary work which influences the waiting times by making it longer. The unavailability of more blood pressure machines contributes to waiting times as the blood pressure measurements could not continue until the machine was returned to the antenatal clinic. The lack of knowledge about the ANC process and poor communication from the clinic staff resulted in time wastage as the participant wasted 15 minutes trying to establish what to do next.

Participant 006 had a follow-up appointment for results. She arrived at 07:13. At 10:34 the midwife called the participant and gave her the blood results, pregnancy vitamins, health education and documented the consult. At 10:46 the participant went to reception to hand in her folder. (Observation five)

This participant had 14 minutes' contact time, she waited 216 minutes and spent a total of 230 minutes (3h+) in the facility. The participant had a long waiting time and spent a long time in the facility considering she came for her blood results. This participant had no biometrics done, and she spent most of her time waiting to be called by the midwife. The clinic had many patients on this day which can influence the waiting times.

Participant 007 had an appointment for a routine antenatal care visit. The participant arrived at 07:05. Her urine analysis and weight were done at 07:13. The blood pressure was done at 08:46 and the participant was called by the midwife at 10:01. A student was present with the midwife in the consultation room. The student done the abdominal palpation, SFM and auscultation of the foetal heart rate. Thereafter the midwife

repeated the procedures to confirm the student's findings. There was a discrepancy between the two findings and the midwife done corrective counselling with the student. The results of the consult were documented and a follow-up appointment was given to the participant. At 10:11 the participant handed in her folder to reception. (Observation six)

The participant had 17 minutes' contact time, she waited 172 minutes and spent a total of 189 minutes (3h+) in the facility. The participant had a long waiting time and spent a long time at the facility. Training students thus compounds waiting times. The participant's consultation time was longer than anticipated, which affects the waiting times of all those patients who need to be seen after her.

4.4.3.2 Booking visit and BANC site referrals

This group of participants had longer ANC visits mainly as a result of the follow-up appointments being attended to first. The number of follow-up patients therefore also directly affects the length of time that a booking patient spends at the facility. The booking visits and BANC site referrals also undergo more ANC activities than the follow-up patients, which extends the time spent at the facility. The total time spent at the facility for this group ranged from 338 minutes to 503 minutes. Table 4.2 reflects a summary of the waiting times (See Appendix 10 for the initial booking visits and the waiting times).

Table 4.2: Waiting times of the initial booking visit

Participant 008	Participant 009	Participant 011	Participant 012	Participant 013	Participant 014
Contact time:	Contact time:	Contact time:	Contact time:	Contact time:	Contact time:
54 minutes	66 minutes	135 minutes	65 minutes	88 minutes	191 minutes
Waiting time:	Waiting time:	Waiting time:	Waiting time:	Waiting time:	Waiting time:
284 minutes	371 minutes	368 minutes	354 minutes	363 minutes	301 minutes
Total time at facility:	Total time at facility:	Total time at facility:	Total time at facility:	Total time at facility:	Total time at facility:
338 minutes	437 minutes	503 minutes	419 minutes	451 minutes	492 minutes

Participant 008 was a referral from one of the surrounding BANC sites. The participant arrived at 06:30. Her urine analysis, weight and height were done at 07:34. At 09:06 the participant reported to the reception to open a folder. Thereafter, at 09:22 her blood pressure reading was taken and her Hb was done. At 09:30 the participant went to see the HIV counsellor. Thereafter the participant seemed lost not knowing what to do next

and made enquiries by the staff in the counselling rooms. At 10:40 the history sections of the participant's ANC record was obtained and her mid-upper arm circumference (MUAC) was done. The participant went back to HIV counsellor's room at 10:44. At 11:58 the participant had her consultation with a midwife. An abdominal palpation was done, auscultation of the foetal heart rate and the SFM. The participant was given medication, health education and a follow-up appointment. (Observation seven)

The participant had 54 minutes' contact time, she waited 284 minutes and spent a total of 338 minutes (5h+) at the facility. The participant had a very long waiting time and spent a long time in the facility. The participant's confusion with the ANC process is evident and constitutes wastage in the workflow process. Initial booking visits have more activities that need to be completed, and they are attended to after the follow-up appointments. This extends the waiting times for the initial booking appointments.

Participant 009 was a new patient that arrived at antenatal clinic to book her pregnancy. The participant arrived at 06:20 and at 08:39 she went to see the HIV counsellor. Her urine analysis, weight and height were done at 09:11. The MUAC and her ANC record was completed at 09:25. The participant went to the reception at 10:15 to open a folder and then proceeded to hand in her folder at the seminar room at 10:47. At 11:00 her blood pressure reading and Hb were done. The participant went to the midwife consultation area to have her blood drawn at 12:03. Thereafter, at 12:34, she handed in the blood samples at the seminar room. At 13:12 the participant mentioned to the midwife that she feels weak. She was given something to drink and allowed to rest for four minutes before the midwife conducted her assessment of the patient. The midwife's assessment included a physical examination, abdominal palpation, SFM and auscultation of the foetal heart. The midwife documented the consultation's findings, gave the participant medication, health education and a follow-up appointment. (Observation eight)

The participant had 66 minutes' contact time, she waited 371 minutes and spent a total of 437 minutes (7h+) at the facility. The participant waited a long time and spent a long time in the facility. The resting period before the midwife's consultation can influence the waiting time of those patients being seen thereafter, which also contributed to increasing the participant's contract time, adding to the overall time spent at the facility.

Participant 011 was a new patient that arrived at the clinic to book her pregnancy. The participant arrived at 05:50 at the clinic. At 08:17 the participant's ANC record was completed and her MUAC was done. Her urine analysis, weight and height were done

at 08:47. Thereafter she proceeded to have her HIV counselling and testing done at 09:04. At 10:11 the participant went to the reception to open a folder. At 11:34 the participant went to the midwives' consultation area to have her blood samples collected. Thereafter the participant proceeded to have her blood pressure reading and Hb done at 11:45. At 13:00 the participant handed in her blood samples at the seminar room. At 13:17 the participant was recruited for another study that is being done at Gugulethu MOU. The participant arrived back at antenatal clinic at 14:00 and went to see the midwife. During the consultation, the abdominal palpation was done, the SFM and auscultation of the foetal heart rate. The midwife documented her findings, gave the patient medication, health education and a follow-up appointment. (Observation nine)

The participant had 135 minutes' contact time, she waited 368 minutes and spent a total of 503 minutes (8h+) at the facility. The participant spent a long time at the facility and had a long waiting time. The recruitment process for the study compounded the waiting times. When the participant arrived back from the recruitment process, the clinic was empty. Additional activities that do not form part of the antenatal clinic activities can thus increase the waiting times.

Participant 012 was a new patient that arrived at the antenatal clinic to book her pregnancy. She arrived at the clinic at 06:10. At 08:44 the participant had her HIV counselling and testing done then proceeded to the lavatory, at 08:53, for her urine analysis, weight and height measurement. At 09:10, the participant was called to the reception to open her folder. Thereafter, at 09:37, the participants blood pressure reading was done and her Hb measurement. At 10:15 the patient proceeded to the seminar room for the MUAC measurement and the completion of her ANC record. The participant went to the midwives' consultation area to have her blood samples drawn then proceeded to the seminar room to hand in the blood samples at 12:04. At 12:57 the participant had her consultation with the midwife. During the consultation, a physical assessment was done and an abdominal palpation. The participant's uterus was not detected abdominally and the participant was sent to the lavatory so that a pregnancy test could be done. The pregnancy test was positive. The midwife documented the consultation findings, the participant was given medication and health education and two follow up appointments were given. One appointment for an ultrasound and the other for a follow up, at the antenatal clinic. (Observation ten)

The participant had 65 minutes' contact time, she waited 354 minutes and spent a total of 419 minutes (6h+) at the facility. The participant had a long waiting time and spent a long time at

the facility. Even though there was the addition of the pregnancy test during the consultation time, this did not make the consultation time longer than the other women attending the clinic.

Participant 013 was a new patient that arrived to book her pregnancy. She arrived at the clinic at 06:00. At 08:28 she went to the lavatory for her urine analysis, weight and height. Thereafter at 08:49 she went to reception to open a folder. At 09:09 the participant went to HIV counsellor for her HIV counselling and testing. Her blood pressure measurement and Hb was done at 09:39. At 10:49 the participant went to the seminar room for the MUAC and ANC record was completed. At 11:03 and at 11:11 the participant went to the counselling rooms. At 11:28 the participant had her blood samples drawn in the midwives' consultation area. At 12:24 the blood samples were handed in by the seminar room. At 13:17 the participant had her consultation with the midwife. During the consultation a physical assessment was done, abdominal palpation, SFM and auscultation of the foetal heart rate. The midwife documented the findings of the examination, gave the participant medication and a follow-up appointment. (Observation eleven)

The participant had 88 minutes of contact time, she waited 363 minutes, and she spent a total of 451 minutes (7h+) at the facility. The participant spent a long time in the facility and had a long waiting time. Confusion with the antenatal clinic's process was evident when the participant repeatedly went to seek assistance from the HIV counsellor; however, this did not appear to influence her waiting times.

Participant 014 was a new patient that arrived at the antenatal clinic to book her pregnancy. She arrived at the clinic at 06:28. At 08:37 she went to a counselling room for the HIV counselling and testing. At 08:58 the participant went to the lavatory for her urine analysis, weight and height to be done. At 09:21 the participant's blood pressure and Hb measurements were done. At 09:25 the participant went to one of the counselling rooms and at 09:55 the participant was recruited for another study that was being conducted at MOU. The participant had not yet opened a folder and the study recruiter took the participant to the reception so that she could open a folder. At 11:20 the participant went to the seminar room for the MUAC and to complete the ANC record. Thereafter, at 11:28 she went to one of the counselling rooms then took a seat in the waiting area. The study recruiter arrived and took the participant to a room that was not part of the confines of the antenatal clinic. At 12:35 the participant had her blood samples taken in one of the counselling rooms. It appeared as though an external audit was being conducted in the antenatal clinic on this day. The participant handed in her blood samples at the seminar room at 12:50. At 12:54 the participant

went to the study recruiter on the labour ward's side of the MOU. At 14:19 the participant was seen by a midwife. When the participant arrived back from the study recruiter there were only two patients left in the clinic. During the midwife consultation, a physical examination was done and an abdominal palpation. The participant was requested to pass urine so that a pregnancy test could be done as her uterus was not palpable. The pregnancy test was positive, the participant received medication and a follow-up appointment. The midwife documented the findings of her examination. (Observation twelve)

The participant had 191 minutes of contact time, she waited 301 minutes and spent a total of 492 minutes (8h+) at the facility. The participant spent a long time in the antenatal clinic and had a long waiting time. The study recruitment increased her time spent at the facility, and it also increased her waiting time as she was one of the first patients to arrive at the clinic yet she was one of the last patients to be seen. The external audit that occurred also influenced the workflow as one of the midwives was busy with the auditors and not attending to patients. Small meetings were held, presumably regarding the audit that also took the staff away from attending to the patients. These factors contributed to a longer waiting time.

4.5 Embedded unit of analysis two: Pregnant women's perceptions

Four major themes emerged from the data which answered the study's objectives, and subthemes were identified by the researcher during data collection and analysis. The themes identified were the utilisation of ANC, waiting time in the antenatal clinic, barriers to waiting time, and facilitators of waiting time. The themes and subthemes are depicted in Tables 4.3 – 4.6.

4.5.1 Theme One: Utilisation of ANC

This theme addresses women's attitude and behaviours towards ANC as well as their willingness to attend ANC services. Two subthemes emerged from the data, namely failure to seek care and ANC services. The description of the subthemes is detailed next.

Table 4.3: Theme one and subthemes

THEME ONE	SUBTHEMES
UTILISATION OF ANC	❖ Failure to seek care
	❖ ANC services

4.5.1.1 Subtheme: Failure to seek care

This subtheme depicts the reasons why women did not attend ANC or delayed seeking ANC. Women claimed to be too busy to attend ANC and they did not have the money for transport to get to the antenatal clinic.

Sometimes I will be busy, sometimes I'm not around. Like sometimes if I don't have money for transport, I just refuse to come most of the time. (Participant 003)

Some women sought ANC late in their pregnancy. An unplanned pregnancy and the internal struggle on whether to keep the baby or abort the pregnancy was a factor that contributed to a delay in seeking ANC.

I came to book late because I was just busy and I was not sure whether to keep the baby or to do an abortion but then I just decided that it's too late for an abortion so I just had to let it go. (Participant 009)

Advanced maternal age was another factor that contributed to delayed ANC. Some women had the perception that a certain age is related to an inability to conceive. One participant was under the impression that she could no longer have children due to her age. As a result of this perception, she only realised she was pregnant when she was already 20 weeks' gestation.

Yo, I didn't understand why I'm pregnant because... No. I'm not...the baby...I'm not... I didn't want the baby because I have got a baby 2012 boy. I think it's time finished to have... (Participant 011)

4.5.1.2 Subtheme: ANC services

This subtheme depicts the importance of ANC and women's satisfaction with the ANC service. Women recognised the importance of ANC. Eleven of the 12 study participants utilised ANC services without defaulting any appointments. The women associated ANC with preventing mother-to-child-transmission of HIV. Antenatal care was viewed as important as it was a means to establish whether the woman and the foetus are well. Antenatal care was also seen as a means of detecting and treating complications when they occur.

I've never missed my dates, I always go, all the time. To check the baby. If there might be something wrong then they will see it before time. To see everything is okay with the baby. And also, with you as well. And try to protect the child from the HIV thing. (Participant 008)

They say sometimes the things can happened so you must come to the clinic so you can check. Sometimes you have a discharge and all those things so you must come to the clinic. (Participant 006)

Age and lack of knowledge about pregnancy was also viewed as a reason to seek ANC.

In the clinics they test for everything. So, I thought I should come. Because I'm still young and I don't know some things. (Participant 014)

Participants deemed ANC as important and had a desire to attend the service. One participant verbalised that she was upset that she did not receive ANC because the clinic was fully booked.

They wrote it in my card, so I came here. So, it was going to be my first time here. Then when I came here, they said to me, no, I must come this week. And I was like, hell no, because I was given the day to come here. So, don't they know that I'm supposed to be here? But then again, I don't want the big drama of that. So, maybe it's their policy or whatever, so I left. (Participant 008)

Similarly, another participant did not want to be sent home without an appointment for ANC. This alludes to the desire to attend ANC and the importance of receiving ANC.

Because if I'm... if I miss like appointment today, if I can come another day they can say, no, you will come. And then I can take that day only to come here and they're giving me another date, so I don't want that. I don't want that. I just want to get... go well with my visit in this... (Participant 004)

Satisfaction with services rendered can influence service utilisation. Some of the women mentioned that they were satisfied with the services rendered by the midwives, and this made them want to continue with ANC.

They help very well at treating me very well. And that's why I always come, and they try and help, they give me that, I must come this day and take these pills, drink it, what, what. I just follow almost the same because I see they help me so much. (Participant 005)

The participants demonstrated an awareness of the importance of ANC services. This was also evident through the ANC utilisation patterns of the participants; only one participant defaulted on her ANC appointments.

4.5.2 Theme two: Waiting time in the antenatal clinic

This theme addresses women's perceptions and experiences of the waiting time in the antenatal clinic. This theme is discussed under two subthemes: description of waiting times and patient arrival times.

Table 4.4: Theme two and subthemes

THEME TWO	SUBTHEMES
WAITING TIME IN THE ANTENATAL CLINIC	❖ Description of waiting times
	❖ Patient arrival times

4.5.2.1 Subtheme: Description of waiting times

Many of the participants felt that the waiting times in the clinic were long. This was consistent among women who came for their first booking visit. Of the women who came for their follow-up appointments, there were differences of opinions. Some of the women felt that their waiting time was not long or acceptable, while others felt that they waited long.

Ja. Because that day we come so early in the morning at 6 o'clock, then we go 3 o'clock. (Participant 005)

Ja, you wait very long. (Participant 013)

I come here. For the first time I stay long. I go home 5 o'clock. I come here 7 o'clock but now the situation change because this time I go home. (Participant 007)

One participant felt that the waiting time was acceptable. She justifies her waiting time by stating that other patients may need attention and she does not know what the midwives are doing or what problems other patients have.

It's not long. Because last time I was here like 7 o'clock and then I went home like 9 o'clock or so, an hour I think it's fine. I think one hour is fine for the hospital because I'm not only the patient here. (Participant 004)

One participant felt that her visit was short as she could come to the clinic and go to work after her clinic visit.

Because I needed to make it first here, and maybe if it's 8 o'clock I need to go home. I said to you already I'm going to work. So, that's why I come early in the morning like that. (Participant 005)

Dissimilarly, another participant stated that her clinic visit ended too late and she could not go to work.

For the first time it was long but I'm not sure what time, what time... But I decided to not going at work because it was late late. (Participant 001)

Many of the participants attached a negative connotation to their experience of waiting times. Waiting in the clinic was described as boring and unpleasant.

It was boring because I have been here early. It has been a long time I'm here, past 7 so half past 10. That's the time that I get the nurse, it's boring it's not nice. That's a lot of hours. (Participant 006)

So I think for me that was just like annoying because I don't see like a need coming early whereas you're going to be served later so we are, it was just boring. (Participant 009)

Women who came for their initial booking visits felt disregarded sitting and waiting in the waiting area as the women who came for their follow-up appointments are attended to first. One participant felt that the staff do not care about the booking patients because they wait so long and are attended to last.

Like they come at 10 past 7 and they started to chat and all that stuff and you're just like as if there are no one here yeah. Their focus is on one thing like if they are busy with those who have appointments they will all be busy on that side and not care about others and then they will just like when they have chance on this side just keep on taking 1 or 2 on this side. Like chilling like as if there is nothing happening and they don't care about other people. Like they only care about those who only have appointments. (Participant 009)

The participants' perceptions of waiting times varied. Generally, the women who had their booking visits experienced waiting as a negative feeling. Most of the participants had long waiting times, but not all the participants interpreted the waiting time as long.

4.5.2.2 Subtheme: Patient arrival times

This subtheme was prominent among the women who had their initial booking visit. When patients are given appointments for a booking visit, they are informed that they need to be at the clinic early and that they should bring food with them on the day of the visit. This demonstrates that the staff are aware of the long waiting times.

They said we must arrive before half past six, so I was here estimatedly I was here before half past six, it was 28 minutes past when I arrived here in the clinic. (Participant 014)

Yeah come half past they told you and they told you, you must bring your lunchbox because you will stay the whole day. (Participant 006)

The participants arrived early for their visits, yet the staff arrive later than when the patients are expected to come. The discrepancy between the staff arrival time and when the patients are told to arrive is a source of unhappiness among the patients. A few of the participants expressed annoyance and frustration at having to be at the clinic early when the staff arrive later.

So, they wrote in my card I must come half past six. So, I was here at half past six. Guess what? They haven't arrived at half past six. But, anyway, they have to do what she has to do. So, I had to be in the queue. So, then they came in at eight, maybe... ja, the first one came in at eight and then they came in, they came in, and they came in. But I feel they expect us to come at half past six, whereas they're going to come in at nine. Maybe their time to come in is nine. (Participant 008)

Participants felt that the staff are inconsiderate by not starting earlier when they inform the patients to come early. Similarly, another participant stated that it is pointless to arrive at the clinic early.

Especially for those who came early. They only think of themselves and they don't think of other people's time yeah. It doesn't matter what time you came here, it depends on them so what's the use of coming here early while they will do their own thing which is not right. (Participant 009)

Because you can check the time, half past six or eight, you already waited. So, if everyone would arrive at half past six maybe we would have been done by now. (Participant 008)

Another participant also felt that the staff are inconsiderate with regard to transportation. The participant expressed her concern for her safety when she needs to be at the clinic early. She stated that coming to the clinic early is more dangerous than coming to the facility later in the day. She also mentioned that using public transport is not safe and the staff have their own transport. Many of the patients are unhappy that they are informed to arrive early at the clinic but the staff arrive later. Some of the participants did not agree with the arrival times given and there was a concern for their safety with the use of public transportation and it being dark early in the morning when they have to be at the clinic.

And I feel that sometimes that half past six is not safe. Remember, there's these things happening outside now. Like things are happening. So, now remember, you must take a taxi at six, and you might be safe, you might not be safe to come here. Whereas they are coming at eight with their own cars or maybe they're being dropped. At least at eight you can go out. Like things are happening. (Participant 008)

The staff arrival times and the times that the patients are informed to arrive at the clinic is a source of discontent, particularly among the women who had their initial booking visit. The participant's concern for her safety is valid as a result of the high crime reports in the area.

4.5.3 Theme three: Barriers to waiting times

This theme encompasses the reasons why women felt they waited long during their clinic visits. Six subthemes emerged from this theme, which includes staff factors, operational functioning, ANC communication, equipment availability and infrastructure, and study recruitment.

Table 4.5: Theme three and subthemes

THEME THREE:	SUBTHEMES
BARRIERS TO WAITING TIME	❖ Staff factors
	❖ Operational functioning
	❖ ANC communication
	❖ Patient numbers
	❖ Equipment availability and infrastructure
	❖ Study recruitment

4.5.3.1 Subtheme: Staff factors

Arrival times and operational times were stated as reasons why the waiting times were long. Some participants felt that the staff arrived on duty late. Participants felt that the staff should start working when the patients arrive. They also mentioned that the staff did not start working immediately when they arrived on duty.

I am not so sure even what time they knock. If ever I know what time they knock because she just arrive now now now. The one who called me. Knock on the time here because she's the one who is the last to come here at the clinic. I didn't check the time that time. But it's late now. It's now now now maybe around too 10. It was late the time she will arrive. Yeah if ever she came earlier say she is knocking at 7 o'clock maybe now I would go home-long time. (Participant 006)

And then after that wait for the nurses to arrive. When they arrive they started doing their own things and then after that that's when they come and ask us what are you here for? Booking. (Participant 009)

The nurses would arrive between 07:00-07:15. The midwives arrived between 07:30-08:10. One midwife was always on duty at 07:30 and started to organize the patients. When the folders were ready the midwives started attending to the patients. (Researcher's observation)

One participant felt that she waited because the ultrasound department was opened at 08:20am instead of 08:00am.

Okay... I came here at quarter-to seven neh, then I wait... Then there by 8 o'clock they give us the folders to go to the scan. Then when I go to the scan, waiting there... because they are not open. So, waiting there by-for 15 minutes outside. Then we decide to come back because it's cold there that we come back. Then when it's open, I-we send someone to...to check if it's open or not. Then that one did came call us when they they are open there by quarter past to twenty past eight. (Participant 001, Pilot)

The patients were given folders at 07:58 and told to go to the ultrasound department. At 08:20 the ultrasound department opened. (Researcher's observation)

Timekeeping among the staff emerged as a reason for long waiting times. Some participants

felt that the staff are taking long tea and lunch breaks. Participants also stated that they had to wait until the tea and lunchtimes were over before they would be seen, which contributed to their long waiting time.

Because remember now you're going to come at half past six, and then it's lunchtime, and then we have to wait after. It's lunchtime for them, then we have to wait for them to finish, it's an hour lunchtime. So, when are you going to go home? (Participant 008)

Determining whether the midwives went to lunch or tea was not possible. The midwives were seen eating food between consultations. The researcher never saw the midwives leave the clinic with bags or food during the clinic's operation times. (Researcher's observation)

The staff working at a slow pace also contributed to a long waiting time as well as the staff having leisurely conversations during their working hours.

I think they are slow or maybe the patient needs attention maybe. (Participant 007)

Maybe... I don't know whether it's because they are slow. I don't know. Because I don't see anything that can take so long. In a half hour, yo. I don't know. (Participant 012)

Sometimes because you sit there and chatter, chatter there. Mm. It's like brainstorming there. They going to take the whole day. (Participant 012)

Because they gossip a lot. Seriously, they gossip a lot. (Participant 014)

In the seminar room, staff were having conversations. During a midwife's consultation, another staff member interrupted the consultation and a conversation was held during the patient's consultation time. This lengthened the patient's consultation time and increased the after coming patients waiting times. (Researcher's observation)

Mixed feelings were presented regarding staff quota. Some participants felt that there was a shortage of staff and others felt that there were adequate staffing levels in the clinic. The shortage of staff was seen as a reason for long waiting times as well as the number of patients in the clinic.

I think it's... the shortage of staff. I don't know. [Laughs] (Participant 011)

I don't know because there's a lot of nurses. Maybe it's us, we are too much. I will say, because I think there's four or five inside there. (Participant 012)

I think there is enough staff because there's a lot of them here. (Participant 008)

Staff attitude and behaviours were seen to contribute to extended clinic visits. Some women felt that they could not complain if they were unhappy about the clinic's functioning. Participants felt that complaints are disregarded and therefore it is not worthwhile to complain. Another participant said that complaints result in punishment, such as being seen last.

Sometimes we as patients we keep on back chatting with them like if you say something and then you're going to say it back, who it will end up to and they will tell you that okay you're back chatting me, you better stay there, you will be the last one. That's so sad and that's disgusting. (Participant 009)

Even if you come and raise your voice saying I was the first one, they will just spoof [ignore] you. They will say we are telling you that you're going to be... It seems like we are not free and we don't have to raise our voices. We don't have to say something that we don't feel which is not good. They are our own main speakers just you have to listen to themselves. (Participant 009)

One participant mentioned that staff meetings during clinic operation times resulted in the patients waiting longer.

I think they were busy talking. I think... I don't know. But it is something serious for the staff. Yes. Maybe they were telling them what to do and whatsoever. In the other piece of page that they will be given, to each of the sisters, the midwives. So, we had to move from there [midwife consultation room] to there [counselling room] because maybe we were going to disturb whatsoever. So... Some sort of a small meeting. (Participant 014)

The clinic was audited by an external party. The meeting was related to the audit. (Researcher's observation)

According to the women's perspectives, waiting times were influenced by staff arrival and commencement of work times, long break times, staff working at a slow pace, staffing levels, the attitude of the staff, and the occurrence of meetings during clinic operation times.

4.5.3.2 Subtheme: Operational functioning

Many of the new patients who came for their initial booking visit felt disorientated during their visit. They would observe what other patients had done in order to understand the clinic processes. They would ask for assistance from other patients to guide them in their clinic

visit. Some participants said that there was no orientation given. One participant said that they were orientated, but she was nervous and this made her forget what was said.

'Cos people, they don't know what to do, we keep on asking each other where we're going next. Did you go to this room? If someone said no, I didn't, and then, okay, I've also got to go there and stuff, ja. (Participant 013)

Because you don't know where to go. You don't know where to go, you're going to follow your people that... Where are we going now? After this, where are we going now? So, at least if it was explained. But they did explain at the first time that if it's your first time you're going to go to the counsellor, and blah, blah, blah. But, you know, when it's your first time you're very nervous. So, you don't even hear what they say. (Participant 012)

There is also no consistent workflow in the clinic. This was seen as a reason for long waiting times among many participants. The women who came for their booking visits did not have a numbering system whereby they proceeded through the ANC stations. The women would observe which rooms are available and then enter the rooms. The order in which the women arrived gets lost as the women shift seats to enter into the different rooms at different times.

If you were first, if you came here first or you're first in the line, you don't go... like it doesn't go according to what time... it doesn't go according to where you're seated. Anyone will just come in and maybe do the blood tests and stuff, and then you're still... still standing there. (Participant 013)

Like they should have a routine where they have you know like I started to counsellors and then after counsellors I went to diabetic, not all of us did that the same way. Some of them they started with history room and they came back to diabetics and then after that they went to counsellors so we just as I say it's not one routine that we have to do like this. If they were doing like on one line maybe they know we have to go to this room, after this room, it's compulsory to go to this room. We don't have to skip each room like that that will be fine. (Participant 009)

Patients were seen asking one another which rooms to go to next. Two patients were seen running to get to a room first so that their blood pressure could be taken. (Researcher's observation)

The clinic's disorganisation left many women feeling lost and confused with the process. One participant also felt that the disorganised workflow is not a fair process.

If ever they were mixing maybe it will be fine because we all wake up early so maybe those ones, old [follow up appointments], they come here around 9. It's like but you were here before them but they go early. (Participant 006)

The biggest contributor to the long waiting time was that the women who came for their follow-up visits were seen before the women who arrived for their booking visits. The women who came to the clinic for their booking visits were often told to arrive at 06:30 and the women who came for their follow-up visits frequently arrived later.

It's not that I waited long because they started with those ones, that's the problem. They are not mixing. If you are booking, they are starting with those ones, the old ones. Those ones are coming here every day. After they finish they are starting with us. Those new ones. (Participant 006)

Antenatal care activities also influence waiting times. For instance, failure to capture all the patient's details resulted in the patient being sent back to complete her ANC record.

After I went to the history room. Remember I went twice there because the first time they forgot to put my diabetic's details on the portfolio whatever like. (Participant 009)

When blood samples are to be collected the amount of blood samples that are collected influences how long the woman will spend at that station. If a woman is known to be HIV positive, she will not need HIV counselling and testing, and this can reduce her time spent at the clinic.

No, because I know my status, they didn't do my HIV. They only do the prick there, the thingy for the diabetes. Because here, I'm make so quick here, by the counselling and stuff. So, they didn't do so much. Maybe it's because I know my status and they don't need to explain everything. They don't need to explain everything to you again. It's not a must, maybe. Oh, okay. (Participant 012)

They just asked us to come and take off our jackets and just to fold your arm and they will take out 2 bottles of. To me they took out 2 bottles of blood and then they just asked me do I have any disease and then I just said no and then they sent me to the history room again so that they can fill in the blood type or blood what. I don't know what they are filling in there yeah. So after that they will sent you for a blood. Blood pull out and then they took 2 bottles but it depends on person to person how many bottles they will took of your blood and then they send your blood to the lab yeah. (Participant 009)

HIV positive patients had more blood samples taken. The students took longer obtaining blood samples. The ability to locate a vein also influenced the time a patient spent at this station. (Researcher's observation)

The barriers to waiting times were related to the disorganised workflow and the completion of the ANC activities. Many participants expressed confusion and their discontent with the poor workflow.

4.5.3.3 Subtheme: ANC communication

A few of the participants were foreign national women and did not understand Xhosa. The staff mainly spoke Xhosa unless they were approached and the patient informed them that they did not understand the language. The lack of understanding and poor communication resulted in the women feeling lost and confused and seeking assistance from other patients. The language barrier resulted in the women waiting, then seeking assistance, which extended their waiting time.

Ja. I say today I just take... I just ask the other nurse what I was to do now. She said now we need to go home, because I see everyone who will see the book, they just go home. (Participant 005)

The patient seemed lost and stood in the clinic looking around. Thereafter she asked another patient what she needs to do. (Researcher's observation)

As you know, of you are a foreigner or if you can't speak Xhosa and you understand them you can take so long. I think that is another problem because they didn't speak English. I think it's only that I didn't understand the process, that's the language so I take so long. They only speak Xhosa and it was really necessary then, so I didn't understand till I asked someone that was next to me how that they're saying. Then they explained to me... (Participant 004)

One of the participants acted as a translator for the staff and this delayed her ANC activities.

They just call me for other lady behind because she don't speak any English and she don't understand English, so they're calling me to make her straight. (Participant 005)

Language barriers thus influenced waiting times because it resulted in a lack of understanding. This caused confusion with the ANC process, and the patients were forced to seek assistance in order to navigate through the ANC process.

4.5.3.4 Subtheme: Patient numbers

The number of patients at the clinic influenced the waiting time. The more follow-up patients there were, the longer the patients who came for their initial booking visits had to wait. The vast number of patients who came for booking visits also increased the waiting time.

It's a lot of people who visit this clinic. There's too much. There is a lot of patients.
(Participant 011)

Because most of the time they take a lot of the follow ups. Today was a few for bookings and a lot for follow ups. (Participant 014)

The number of patients per day is not consistent. On some days there would be fewer patients and this would result in decreased waiting times.

Today we were not many like some other days. Today it was short but before it was long. (Participant 003)

It wasn't a lot of people 'cos it get full here. But today it wasn't that full, according to my... according to two years back. (Participant 013)

Patient numbers were not consistent. Some days the clinic was full other days the clinic was not very full. (Researcher's observation)

One participant stated that staff wait until the number of patients increases before they start working, which is why the waiting time is so long.

Its timekeeper only and it's only that, if they feel like there are 10 people, they will just wait for us to be times 2. 10 times 2 which is like that's where it stays. It makes it difficult for them to help us because when they see us like. When they see there are 10 people already here patients, they will just be oh they are few. Let me just wait to have 5 which is like they have to work on the number that they see now and then when the others arrive then they start to help them. (Participant 009)

Patient numbers varied on a daily basis. Significant numbers of patients resulted in longer waiting times.

4.5.3.5 Subtheme: Equipment availability and infrastructure

In the clinic, one nurse would take the patients' blood pressure. Two participants had to have their blood pressures redone because the battery of the blood pressure machine was low

and the machine was removed from the clinic and taken to the labour ward.

Twice because the machine was going off, the battery was low. The battery was low, so then they put another machine for me to go in, yes. It was low because it's just going off when I was busy doing it. They you wait it will be off. Because I didn't sit like 15 minutes waiting, maybe five to ten minutes then they called me again to do the blood pressure. (Participant 004)

Ja, because this time, the other sister did that machine to go out with the machine. And then I come again. She says you must come again because that time they didn't make it. When I was in, the other sister come in and they needed to pull this machine, they needed to go with the machine to another room... (Participant 005)

The blood pressure machine was seen being removed from the antenatal clinic and at a later stage the blood pressures were repeated. (Researcher's observation)

One participant waited as a result of a telephone that was not available.

I came back, they send me back, to the clinic, to take another date for appointment-Groote, Groote Schuur. Then I wait there by the nurse there by the clinic. I think 10 minutes because there was no phone to call there by Groote Schuur... After that the nurse got the the phone she did phone them...there by Groote Schuur and did help me. (Participant 001, Pilot)

The patient waited 18 minutes as the telephone was not available to make an appointment. (Researcher's observation)

The antenatal clinic has four cubicles in the lavatory, but only two of the four cubical were available for the patients to use. There is also only one nurse doing the urine analysis, and measuring women's weight and height. This resulted in queues at the toilet.

Yes, also because the toilet's only two that work, and the others are full of equipment, the other toilets for the patients. Because if they call... they call also for the follow ups to go test urine. So, if they call four and they call three of us then we have to wait for the queue there, and there's only one person also testing the urine in the waiting room. (Participant 014)

The incorrect use of equipment, lack of equipment and poor infrastructure therefore resulted in longer patient waiting times.

4.5.3.6 Subtheme: Study recruitment

Another study was being conducted at the Gugulethu MOU at the time of data collection. The field workers were recruiting participants from the antenatal clinic. Two of the participants were recruited for the study. One of the participants stated that her being recruited did not influence her waiting time as the recruitment process served as a means to occupy her during her waiting process in the antenatal clinic.

But it would have been that shorter because they also started late. So, in the meantime when I was in the study the time was flowing also. So, when I came back everything was going a bit faster. (Participant 014)

The recruitment process for the study did extend their clinic visits. The one participant was seen last as a result of the recruitment process. The other participant was third in line to see the midwife. When she arrived back from the recruitment process, there was only three patients left in the clinic. (Researcher's observation)

The study recruitment process extended the waiting times of both participants. Study recruitment thus influences waiting times, but the effect is variable and cannot be predicted.

4.5.4 Theme four: Facilitators of waiting times

This theme encompasses the participants' views on how waiting times can be improved. This theme is discussed in more detail under the subthemes of operational factors and staff factors.

Table 4.6: Theme four and subthemes

THEME FOUR:	SUBTHEMES
FACILITATORS OF WAITING TIMES	❖ Operational factors
	❖ Staff factors

4.5.4.1 Subtheme: Operational factors

One of the participants felt that in order to reduce waiting times, the folders of the follow-up patients could be drawn the day before their scheduled appointment.

When they know that there are people coming for such like on that date, they have to sort their things in advance knowing that on the 12th of September there will be 15 people who are going to come for appointments so it will be very fine if they will just

take out all their books or whatever they have here and just put them aside so that when the person comes in and fetches her whatever then they put her card on the box and fetches her book by the reception and then just come. (Participant 009)

Other suggestions to improve waiting times were to have BANC site referrals on certain days and separate days for the patients who come for their initial bookings and patients who attend for follow-up appointments.

I know they do have their own people but it will be better like that if they know that okay 2 days per week we are dealing with our own people and then 3 days of the week, maybe on 1 day we are dealing with 2 clinics only and then on the second day another 2 clinics and then the 5th day of the week we are only taking bookings, the first bookers only that will be fine to them. Maybe it won't overload their work and do something or they won't get bored or end up shouting at people. (Participant 009)

The participants felt that there should be a set workflow routine as this would reduce the waiting time and cause less disorientation. Many participants also felt that the clinic should operate on a first-come-first-served basis, irrespective of whether the woman came for a booking visit or a follow-up appointment.

Maybe come in, first come first serve. Yes. It would be better. (Participant 013)

If they were doing like on one line maybe they know we have to go to this room, after this room, it's compulsory to go to this room. We don't have to skip each room like that that will be fine. (Participant 009)

The participants also felt that the clinic should have a numbering system for the patients who come to book their initial appointments.

It's a problem, it's supposed to be mixed so that we can have numbers. They are supposed to give us numbers so that we will know. Number 1 if we have number 1, number 10 if you have number 10. (Participant 006)

Another suggestion to reduce the waiting time was to reduce the number of patients being seen per day.

Or they take a certain amount for the day, number. Maybe they say they will take ten for the day. And then, you know, they can quickly finish the ten and then leave. And then they can do whatever they want to do after that. (Participant 008)

I think it is their right to return people who come late especially for bookings and other stuff. We All know that clinic opens at 7. They are supposed to start at 7 and then people who got here at 6 o'clock until 7, there must be a book by securities where they write their name and then the ones who came after 7, they mustn't take those people so that they can enter their number and wait properly. (Participant 009)

Participants moreover said that there should be more toilets and more equipment to help reduce waiting times.

If there were more toilets and also assistant of the urine process. If they can enlarge the toilets and also assistance of the urine tests. Because I can be quicker. (Participant 014)

It's not enough, one. [Laughs] [Coughs] maybe it's another problem, loss of equipment. I say, they have got no... [Laughs] no machines for doing the patient. No machines. For example, for the BP, there's one. (Participant 011)

4.5.4.2 Subtheme: Staff factors

Staff factors that can reduce waiting time included having more staff in the clinic, and the midwives arriving earlier at work. Staff diversity should also be encouraged by employing individuals from different ethnic groups.

I think they must have some maybe nurses. I think maybe they will be doing better because here there are no nurses. (Participant 003)

So, if everyone would arrive at half past six maybe we would have been done by now. (Participant 008)

We are from different backgrounds and most people they don't understand English which is the medium language we all have to know but I don't think it's something that they have to take people advantage of because there was one girl here, I am not sure whether she is from Zimbabwe or. She didn't understand Xhosa and English so and then this clinic it's in community. I think as much as it is in this community like a local community, the employer or whoever is employing they need to diversify like there must be different people, different languages because the lady who was helping her was a Xhosa lady. I didn't say anyone is not a Xhosa here. There is a Zulu one but she was like keep on shouting on this girl. She doesn't understand. You don't do that. When someone doesn't understand what you're saying you better, I don't know whether you better leave her like that but just try to find an alternative way of helping

her because now she was like shouting at her. Especially in the workplace like when you're working with people there must be something like that. You mustn't be like, especially in most cases there are. I usually work with white people but they're working with me, they know I'm a black person, not everything I know. They teach me and then I got to learn from them so if there is only one culture or one so how can I? You must be a mixture of people so here its only black people so I didn't like that like I was just seeing observing this is not good. (Participant 009)

Patients felt that the staff should spend time orientating the patients as this will decrease confusion, and the women will not waste time trying to find their way through the clinic.

And if they can communicate with the people. Like you come in, you're going to... the first, you're going to go to the first door, you're going to do this, and that lady must be ready for this. Ja, it would be better that way. (Participant 013)

The participants' views on improving waiting times were to employ an appointment system that would encourage a set number of patients for the day. This will also encourage a more organised workflow as patients will be seen according to their time allocation. Another recommendation was that initial booking appointments should be scheduled on separate days. This will dramatically reduce the waiting times for the new booking appointments. More equipment and improved infrastructure were also viewed to be necessary to improve waiting times, and lastly, patient orientation was seen as a means to reduce waiting times.

4.6 Embedded unit of analysis three: Midwives' perceptions

Three major themes were derived from the objectives and subthemes were identified by the researcher during data collection and analysis. The identified themes included the utilisation of ANC services, barriers to waiting time, and facilitators of waiting time. The themes and subthemes are depicted in Tables 4.7 – 4.9.

4.6.1 Theme one: Utilisation of ANC

This theme encompasses the midwives' perspectives on ANC utilisation. Three subthemes emerged from the data, including patient barriers and healthcare barriers. The subthemes are discussed in detail in the sections that follow.

Table 4.7: Theme one and subthemes

THEME ONE	SUBTHEMES
UTILISATION OF ANC	❖ Patient barriers
	❖ Healthcare barriers

4.6.1.1 Subtheme: Patient barriers

The midwives' perceptions of barriers to ANC use were that patients had financial difficulties and problems related to their work that prevents them from seeking ANC.

The others they don't attend clinic because shame, due to the work problems. Some of them is money problem, financial. And financial because if you book early, you'll come for the follow ups many follow ups. They are cleaver they know if you come many times but if you book at thirty-four you will only come maybe three times. (Participant 002, Pilot)

Teenagers would delay seeking ANC since seeking care would make it known that they are pregnant. Teenagers hide their pregnancies because they are fearful of their parents' reactions to the pregnancy.

Some of them are teenagers neh. They fear their parents. They don't want their parents to see that they're pregnant. (Participant 002, Pilot)

Women who have had a previous pregnancy often delay or avoid ANC as they have been through the process and know what to expect; they no longer see the need for ANC. Conversely, multigravidas delayed ANC because they did not know they were pregnant.

They just don't want clinic because sometimes you find that the patient is having a third baby. She never booked. So, it's like she doesn't want to come. They don't want to come. Because when you ask the reason maybe she will tell you that I didn't know that I'm pregnant. But it's the third baby. (Participant 010)

Some women delay seeking ANC due to being embarrassed about the short interval between their pregnancies

And because working in maternity sometimes others, let's say maybe a patient had her baby last year. Now she's pregnant again and she's shy to come and book. (Participant 010)

Women also avoid or delay ANC because they are scared to use public transport and have a concern for their safety and are afraid of being robbed.

Shame, at winter they are scared because they are using public transport. They are being robbed... That is why is they are being robbed... even in front of the hospital... We had so many cases... being robbed... (Participant 002, pilot)

One midwife also stated that patients are lazy to attend ANC as they do not want to be at the clinic early for their ANC visit. Patients are aware of the long waiting time with a booking visit and thus delay seeking care.

And some of them are lazy... they are lazy to wake up, to wake up in the morning. And some of them they said it's full, it's full it's always full. They don't like to stay the whole day at the antenatal clinic, because for the first time they will stay the whole day. (Participant 002, pilot)

But others, maybe they're just lazy to come to the clinic, because others are staying close by but they don't come. (Participant 010)

Women who use alcohol/drugs also often avoid ANC. However, midwives stated that while there are many reasons why women avoid or delay ANC, there are not many women who do not book their initial appointments or who default ANC.

So... But most of the time, most of the unbooked patients are the patients that are using substances, and are the patients that are drinking alcohol most of the time. Most of the time. Otherwise the ones that are usually, normally they are not on any alcohol or substances, they... most of the time they book. It's rare... It's rare that you find... (Participant 010)

Women who are HIV positive and have defaulted their treatment have a tendency to delay or avoid ANC for fear of being reprimanded.

And those who don't attend, those who are HIV positive they default ohh... they default their treatment I don't know why... Because we told them our treatment is free but they like to default. But I think it's not those who are here, who booked here. Those who come from other clinics or from Eastern Cape. If you ask them, we test them-HIV positive, and then when we find out when we probe. This is a defaulter; it's not the first time she's HIV positive those who are defaulting. Yes, most of them are defaulting. (Participant 002, pilot)

Women sometimes also seek ANC late in their pregnancies. Many of the women who book their initial appointments late are from the Eastern Cape. The women want to have their babies in Cape Town.

Those who come late sometimes they come from Eastern Cape they like to come and deliver here. They sometimes they book there but they don't bring their cards because they want to be booked here at Groote Schuur, ag I mean here at Cape Town, they want to deliver at Gugulethu MOU. (Participant 002, pilot)

According to the midwives, the patient barriers to ANC utilisation included financial difficulties, teenagers hiding their pregnancy from their parents, multigravidas being familiar with the pregnancy, women being lazy to attend ANC, women who abuse alcohol/drugs, and HIV-positive women who defaulted their treatment.

4.6.1.2 Subtheme: Healthcare barriers

The judgemental attitude of staff was seen as a barrier to ANC.

So, then when I come in, it's been... nurses are like this. Like, you know, most people are always complaining about nurses, the nurses' attitude and everything. So, people are scared to come because they are scared of nurses, I must be honest. , that's why I'm saying even our attitude contributes sometimes because if we treat them like...if we don't give them any information, we're like doing what we came here to do, they also not going to tolerate that and then they might not even come. (Participant 010)

The patients, moreover, informed one another of the long waiting times at the clinic. This deterred some patients from seeking ANC as they do not want to wait.

For the first time that is why they are late bookers they tell each other's Oh, you will go at three o'clock or two o'clock. Some of them yes, of coming for the first time they don't like to book early. (Participant 002, pilot)

Some patients seek ANC, but due to the long waiting time they leave the facility before their visit is complete.

Because sometimes other patients wait, wait, wait and they give up. They give up because of long time, ja. And then they end up going home. (Participant 010)

Staff attitudes and long waiting times therefore had an influence on the utilisation of ANC services.

4.6.2 Theme two: Barriers to waiting times

This theme elaborates on the midwives' perspectives on the barriers to waiting times in the antenatal clinic. This theme encompasses seven subthemes that will be discussed in the sections that follow.

Table 4.8: Theme two and subthemes

THEME TWO	SUBTHEMES
BARRIERS TO WAITING TIMES	❖ Staff factors
	❖ Patient consultation
	❖ ANC workflow
	❖ Communication
	❖ Equipment availability and infrastructure
	❖ Staff Meetings
	❖ Management functions

4.6.2.1 Subtheme: Staff factors

A midwife felt that students, especially the third-year midwifery students, contribute to long waiting times. The procedures need to be explained to the students and the findings need to be confirmed by the midwife.

The third-year students they are still young. They also sometimes delay us. [Laughs] They sometimes delay us because in the middle you must teach, you must explain. So, it also takes time. But sometimes you feel like you have to do it because they are here to learn. So, it's not going to be fair for us to ignore them like that. But we were also taught, you see. So, yo, sometimes they even delay us. (Participant 010)

The midwives felt that the staff arrival time did not influence waiting time as the antenatal activities need to be done before the patient comes for the consultation with the midwife. At times the midwives need to wait on the patients as their blood pressure or urine analysis has not yet been done.

Because sometimes we do get here late. But it's the same, because even if you got here at seven you will just sit and do nothing because there are no folders, blood pressures are not done, urines are not done. So, we're just here and come and wait for the folders. 'Cos I know sometimes we get here late and then maybe they think they wait because we're late. But it's not. (Participant 010)

On Thursdays, a doctor from one of referral hospitals has consultations with high-risk patients. These patients are given appointments specifically for the doctor. If the doctor is delayed at the hospital and arrives at the clinic late, the patients' waiting time will be extended.

When she comes here the folders are already here, her patients are being done, blood pressure and urinated and then she will just do them. And after she's done, she leaves. So, she doesn't really have waiting time unless maybe she had come, to via Mowbray and then they will delay her there and then she comes here late. Then they must wait for her because there's nothing we can do. (Participant 010)

The number of staff on duty also influences the waiting time. Historically, there were five midwives working in the antenatal clinic, and now there are only four. If staff members are off sick there will be fewer midwives on duty to attend to the patients, which ultimately increases the waiting times. The number of nurses in the clinic also influence waiting time as the nurses are responsible for the urine analysis, weight, history taking, blood pressure and Hb.

When I got here in clinic there was two nurses with how many sisters? One, two, three, four, five... with five sisters. But now it's four sisters, and sometimes they place two nurses, sometimes they place one nurse in clinic. And if we have only four sisters and then when one is sick, we're only left with three. So, you just can see if we have only three sisters and we have a lot of patients that day, maybe 60 to 70, because sometimes we do have 70 something patients a day that came for routine check-up only. I'm not talking about new bookings now. And we have three sisters. They have to wait long for there's nothing really we can do. Otherwise if we have four sisters at least, you also see, if we have four there is... they just do everything. It's quick, quick. But if we are three, we try but it's not like when we are four. (Participant 010)

Usually, there are three HIV counsellors conducting the HIV voluntary counselling and testing. A shortage of HIV counsellors occurs as a result of leave taken or sick leave. When the number of HIV counsellors are reduced it influences the waiting time as there is a delay in the workflow. Patients need to be tested for HIV first before their blood samples can be drawn.

I think it was this month or last month we only had one. I don't know what was happening, but we only had one counsellor for, I think, a week. So, that's when we were calling patients to come for bloods, they will tell you that, I must still go to counsellor, I didn't go to be tested yet. Or sometimes you call them and they will come. And then when you open the folder, not yet tested and then she must go back. (Participant 010)

Staff attitude can prevent women from seeking ANC. The women are afraid of the nurses and therefore do not seek ANC, or they are afraid to speak to the nurses and this causes them to wait longer.

So, people are scared to come because they are scared of nurses, I must be honest. So, that's why I'm saying even our attitude contributes sometimes because if we treat them like...if we don't give them any information, we're like doing what we came here to do, they also not going to tolerate that and then they might not even come. I think maybe it was an age issue. Eish, because the ones that are small, we have 16-year-old, 14-year olds here, 15-year olds. They are shy, they're scared to ask. I think maybe it was age. (Participant 010)

The staff in the antenatal clinic receive assistance from midwives in the labour ward when there is a shortage of staff. They do not receive assistance from the labour ward midwives if there is a full staff quota, even if the antenatal clinic is full. This contributes to waiting times as midwives will have to see more patients.

If the clinic is overflowing and now that we're four they don't help us. They only come when we're three and clinic's overflowing. (Participant 010)

A heavy workload further results in staff exhaustion, which can cause staff to work slower than normal.

When she was run like last month, she had to make sure that everyone's urinated, weighed and blood pressure checked before she goes to pharmacy. And then come back, take history, help for history taking. And also, after we took bloods, help with blood collection from the patients, and then she must go back again to collect the folders. You see, it's too much work for her. Especially, if she's one she might end up being exhausted and then when she's doing blood pressure here she just rest And then say, next. Like take it. She's tired as well. (Participant 010)

On Thursdays, when the doctor is at the antenatal clinic, the doctor will use a midwife's cubicle. There will thus only be three midwives attending to the follow-up appointments and the new booking patients. The fourth midwife will assist the doctor. This can influence the waiting times as fewer midwives are attending to the patients.

What we normally do is on Thursdays if we know that we're having doctor's clinic we don't book a lot of patients for that day because we know one sister is going to... her cubicle is going to be used by doctor and then we're going to be three sisters. And that

sister will help doctor with maybe... like with maybe appointments and maybe other orders. You see sometimes other orders will also delay her, and then she will help the doctor to quicken up like the waiting times for doctor's patients. And also, she will help us with maybe scans and those minor things. (Participant 010)

4.6.2.2 Subtheme: Patient consultation

During patient consultation, completing the patient documentation is time-consuming. As a result of patients losing their MCRs or patients being robbed while their MCR was in their handbags, a decision was made to duplicate the information of the MCR. The duplicate documentation is time-consuming but was implemented as a means to ensure continuity of care and to protect staff against complaints.

And also, paperwork is too much, yo! Because when I got here, we were only documenting in MCR, but now there are two. It's MCR, and then whatever you wrote on MCR, you must also write... There is a form that we must put inside the folder. So, you duplicate. What you wrote in MCR we must write again in the thingy, in the form that you must place in the folder. But they are like, if the patient is going to Eastern Cape, or maybe the patient is claiming whatever, you know, they like to claim. And then the MCR book is missing, so there is nothing to back you up that you did whatever you did. So, that's why there is, there must be an information that is inside the folder, not only MCR. And our patients, they like to be robbed here. And then she will come here and tell me, Sister, I've been robbed and then my MCR book was inside my bag. So, then like they want to have like a back- up information in the folder, that's why. (Participant 010)

Managing complications, such as pregnancy-induced hypertension, sexually transmitted diseases, and HIV results in longer waiting times for patients who still need to be attended.

And if the blood pressure it's high, it's high, we need to do something. We can't say to that patient, wait I must first finish these ones before I do you, because, you know, GPH (gestational protein-urine hypertension) they can even have seizures... So, once that you see that the patient is a severe, having severe high blood pressure then you must stop everything and attend that patient. So, the ones... the others have to wait. And also, sometimes you're going to see a patient and then the patient is complaining of maybe STI signs maybe, a yellowish discharge so we must treat that discharge. So, it also lengthens their waiting time as well. And also, the ones that are HIV positive, because they take a lot of time because you must prescribe for them, medication, you

must maybe sometimes take bloods depending maybe if... Because every three month you must take viral load bloods. So, everyone must wait because you must do the routine check-up first. And then you see like if bloods, all bloods are tested, if bloods are normal. Because if they are not normal you must transfer the patient, or you must manage if ever we are able to manage those abnormal bloods here. (Participant 010)

Midwives need to attend to minor ailments which can also be time-consuming. If the midwife does not attend to the minor ailments and it worsens, the patients will complain.

So, you know, our clients, even if she's coughing, if it started yesterday, coughing, when she comes today she will tell the sister, I am coughing. And then we ask since when and she will tell you since yesterday. But then you must do something for it, even if not that thing gets serious, then she'll say I reported to that sister and then she said ... So, we must educate as well. (Participant 010)

When complications occur early in the day, it will result in longer waiting times, yet if it occurs with the last patient, the waiting time will not be affected.

And if maybe you're number one or you're number two is having a problem then everyone must wait. But it's better if it's number last that is having a problem [laughs] because you're almost done with everyone, then she just wait because she's the one with the problem. (Participant 010)

Telephonic referrals can cause delays with the midwife consultation. When the telephone line is busy, the midwives have to wait and call the facility back to refer a patient. The midwife thus experiences delays with the referral hospital where the accepting doctor needs to first confirm with a senior physician before accepting a patient.

And sometimes you must present the patient at Groote Schuur or Mowbray. And, yor they give us a hard time sometimes. And maybe we must call to Groote Schuur and then sometimes you know you can wait on the line for 15 minutes waiting for Groote Schuur sisters to maybe come and give you whatever date that the patient must go there on. And they don't allow us to just send patient without discussing the patient with them. So, she... Because the doctor took orders and then he was like, okay, just hold on sister, I must go and discuss the patient with my senior. And then he went and wait and wait and wait... And then he came back and then he asked, Sister, am I hear... But he wanted us to repeat what we told him. And then sister did repeat. And then he said, okay Sister, I'm going to come back to you. And then he left. And then he came and he gave us orders. (Participant 010)

4.6.2.3 Subtheme: ANC workflow

The patients who are new and come for their booking visit are seen after the follow-up appointments have been completed. For patients booking their initial appointments, this can cause increased waiting times. The women arriving to book their initial appointments also have much more activities that they have to undergo, which extends their clinic visit.

Unless it's the follow ups the follow ups, we do we start with the follow ups. Because the first-time bookers there's a lot to be done. Urg... Registration, testing, all these talks, everything, everything. They don't do everything for the follow-ups because it's just urine testing and blood pressure And SF measurement that's all. (Participant 002, Pilot)

Follow-up appointments are not deferred to different days. The women who come for follow-up appointments arrive late or they arrive at the clinic in drips and drabs. This will cause delayed waiting times for the patients who have come to book their initial appointments as they are attended after the follow-up appointments.

The follow ups just come bit by bit we can see that its quiet. When you come in the morning, no man it's not full. But one by one you will see them they come late. Yes, and we can't turn them a-away, we don't turn them away the patients even if it is not your date, we don't turn away the routine. (Participant 002, Pilot)

If the work activities are not done, the midwife will not attend to the patient. The midwife cannot attend to the patient if the patient does not have a folder. The midwife cannot attend to the patient if her blood pressure has not been taken. A delay with the antenatal activities will thus result in the midwives waiting on the patients. This delay with the work activities results in longer waiting times.

Because they can also strengthen the waiting period because we will call the new booker and then you find out that maybe blood pressure is not yet done. So, you see that time you must explain to her, your blood pressure is not done, go to whatever room and ask your BP to be done and warra, warra. And then it also takes time. (Participant 010)

There is also no consistent workflow in the antenatal clinic and this is a source of confusion for patients, which can cause longer waiting times.

After they open folders they must go to counsellors to be tested, because the counsellors, there are stickers to paste on the forms that they fill in. And then after

that... but it depends. Maybe a few will go to counsellors, others will go to history taking but there are a lot. So, they must split for the thingy to go. There's no pattern at all.
(Participant 010)

The midwives feel that they have no control over the waiting time. The circumstances surrounding each case is different and unpredictable, and there are many factors that influence the waiting times.

So, we try. But then we don't really have control over their waiting time. (Participant 010)

My perception. The waiting time I can't say what is it? We're trying to make quick. But since there are different stations, we can't help it. We've been trying to be to have a limited time, but we don't know. I can't say we can be quick or what. (Participant 002, Pilot)

The midwives are aware of the long waiting times for the new booking appointments. The midwives feel helpless regarding the waiting times and have empathy with the patients who have to wait so long.

I just feel sorry for the new bookers because there's... we don't have much control over their waiting time because there are a lot of things they must do at a particular day. (Participant 010)

Some midwives feel that follow-up appointments do not take long if they are routine, and therefore they do not have long waiting times.

I feel like the routines they don't wait that long because we push, we really push. We just... We try by all means, but by half past ten or 11 then all our routines are done.
(Participant 010)

The number of patients each day influence the waiting times. Vast numbers of follow-up patients or booking patients will cause long waiting times. Some days the clinic does not have many patients or women who are booked for a specific day do not attend their appointments. This will result in decreased waiting times.

So, maybe we didn't take enough bookings. Because sometimes bookings, they come, they are few. Because sometimes we get maybe less than 20 bookings a day, they didn't come. (Participant 010)

Because it because it's more patient everyday, everyday is more patient. Yesterday, we had more or less like, we see more than hundred patients a day. Including follow ups follow ups and new bookings. For instance, yesterday, we had routine 75 because there was seventy-six for room number seventy-six and then new bookings there were twenty-three. (Participant 002, Pilot)

4.6.2.4 Subtheme: Communication

Language barriers do not increase waiting time according to the midwives. It was stated that women with language barriers seek assistance more readily and are more persistent.

Most of the times the ones that have language barrier they don't just sit here, those ones. They go inside and then they will nag you, and nag you up until you attend to them. And then you ask. And then we'll end up knowing why she's here and then you end up helping them. (Participant 010)

4.6.2.5 Subtheme: Equipment availability and infrastructure

The labour ward and the antenatal clinic share a telephone. The midwives in the antenatal clinic need to walk to the labour ward to fetch the phone in order to make a telephonic referral to the hospital. If a labour ward midwife is using the phone, the midwife from the antenatal clinic needs to wait to use the phone and this, in turn, will result in patients waiting. The distance that the midwife needs to walk to the labour ward also influences patient waiting times as the labour ward is at the opposite end of the MOU building.

So, let's say that sister is making a call that side. And then we also want to make a call to present a patient and there are no student midwives here. So, you must go to labour ward, your patients must wait. And then you go to labour ward to borrow a phone. And then by the time you get there the sister is already on your line discussing the patient, so you must sit and wait for the phone. So, we're using one phone. And then maybe you will wait for the sister. Maybe the sister was starting to present the patient, and then you must sit and wait. It's far from the labour ward to clinic. (Participant 010)

There is one blood pressure machine which also impacts on waiting time. More equipment will result in patients being processed to see the midwives much quicker.

I think it's this room or next room, they normally use these two rooms to share blood pressure. But it's only one nurse that must check the blood pressure for everyone because we only have one dynamap. So, ja. And they must do blood pressures and

there is only one machine. There is only one nurse. So, we have... we also wait for them. (Participant 010)

There is an additional room that can be used for midwife consultations, however, the door was broken and therefore the room was not used. If an additional midwife was available, they could be utilised and this can decrease the waiting times as more manpower would mean faster processing of patients.

There is another one in room 49. But now that door broke. So, but now it's fixed but they're no longer coming because the door was broken. So, that room is just being ignored. (Participant 010)

Midwives shared that there are no resting beds for hypertensive patients in the antenatal clinic. The clinic midwives need to ask the labour ward midwives if there are any beds, then take the patient to the labour ward to rest and manage the women further in the labour ward. Travelling between the departments is time-consuming and increases the waiting time of the patients who still need to be seen.

It stops you and you don't have resting beds in ante natal clinic. You need to stop, you need to leave, you need to go to labour ward and ask a bed there for your patient to rest while waiting for the ambulance. So, you see, like other things we really don't have control over. (Participant 010)

4.6.2.6 Subtheme: Staff meetings

Meetings are usually arranged for Fridays. If a staff meeting is to take place, the meeting is arranged for late morning/afternoon, so that the follow-up patients can be seen. If there are women who arrive late, they will be seen after the staff meeting. In this case, meetings can cause longer waiting times.

Yes, we do sometimes have meetings. But we normally try to shove meetings on Fridays. It depends. We normally... If it's our staff meeting, only staff meeting, we normally do it, try to do it after clinic. We try and push the patients and then... But, you know, we sometimes get here late so those ones must wait. Otherwise the ones that we've got here we normally push them and then we do our meeting after. Because our staff meetings normally start around 11, 12. (Participant 010)

Perinatal problem identification programme (PPIP) meetings usually take place once every three months at 08:00am. The meeting is arranged by doctors and therefore the midwives have no control over them. They also do not know how long the meeting will take. The

midwives try and book fewer patients on those days to reduce the waiting times. They also try and book women who must go for an ultrasound on those days.

Because we have perinatal meetings so doctors just come from Mowbray and come and give us feedback. So, those ones we don't have control over. So, the doctors want us to start them at 8 o'clock in the morning. But what we normally do is if we have a perinatal meeting, they tell us in advance, but we don't book... Otherwise we try by all means, we try. Because if we have a perinatal meeting, we don't book other things to avoid them waiting for us. So, we don't book other things, we only do the ones that must be done for that particular day because we know that we're going to... Because sometimes we're not sure how long is it going to take. So, ja. (Participant 010)

4.6.2.7 Subtheme: Management functions

A management decision was made to duplicate documentation. The midwives protested against the duplicate documentation but it was still implemented. The midwives suggested that a copy of the MCR could be made and placed into the folder. This managerial decision impacts on the patients' waiting time.

How they are saying. We also asked... we argued this when they initiated it, we really argued it. But then again, if managers say yes, because managers, they are not on the floor, they are sitting there. But if they agree, then there's nothing much that we can do. So, but that one I think it can be managed. We don't... Whereby we don't document but they just make copy and put it inside the folders. They made it standard. For everyone you must have that form, you must fill that form and MCR book, both. (Participant 010)

The broken infrastructure, such as the broken doors, were reported on many occasions but were not fixed. The room with the broken door can be used as another consultation room, should help be needed.

There's a room there in room forty-nine. If you can go there, there's a broken door that room was supposed to be used by one of our midwives. The door is open like... If you can see, even this one. This one can fall on someone's toes. That room in room forty-nine it can reduce the the waiting period of our patient because we've got a sister there who is willing to help us... But she doesn't have a room to work. (Participant 002, Pilot)

The allocation of staff varies month to month. The staffing for the labour ward is a priority. This can affect staffing levels in the antenatal clinic and ultimately low staffing levels can cause increased waiting time.

They were not like... Others are all sickness, because there is one that is on sick leave now. So, what they normally do here, they make sure that it's enough staff in labour ward than in clinic. Because they make sure that there are three sisters in labour ward, regardless. And then clinic there can be three or four. Now, for this month, only this month. Last month it was two, ha a last month it was one. This month is was two.
(Participant 010)

4.6.3 Theme three: Facilitators of waiting times

This theme encompasses the midwives' perspectives on how waiting times can be improved and measures to decrease waiting times. This theme consists of five subthemes that will be discussed in detail.

Table 6: Theme three and subthemes

THEME THREE	SUBTHEMES
FACILITATORS OF WAITING TIMES	❖ Decreasing waiting times
	❖ Student assistance
	❖ Staff break times
	❖ Booking system
	❖ Staff factors

4.6.3.1 Subtheme: Decreasing waiting times

The staff are aware of the long waiting times in the clinic. In an effort to decrease the waiting times, the staff has decided to send a nurse to the pharmacy to drop off the patients' prescriptions so that the patients do not need to wait at the pharmacy. A batch of prescriptions are handed in at pharmacy, and the nurse collects it later in the day. If a patient needs medication the midwives dispense it from the ward stock and replace the medication with the stock that comes back from the pharmacy. Issuing medication from the ward stock also avoids unnecessary appointments for the patients.

What we normally do is we write their medication in the folder and then we take their folders to pharmacy. They don't go by themselves. Maybe we will take a stack, maybe ten or nine to pharmacy. And then the medication comes, and then we give them. So,

to also shorten their waiting time, what we did is we tried to have a ward stock of ARVs. So, what we do is when they come for a routine check-up, we also give them their treatment as well. And also, to avoid them coming to the clinic all the time. (Participant 010)

4.6.3.2 Subtheme: Student assistance

Post-basic midwifery students are seen as a help in the antenatal clinic and assist in reducing waiting times. The post-basic midwifery students are asked to present patients to the doctors at the referral hospitals. The midwives felt that the post-basic students know how to present patients for referral, and the midwives supervise the phone call conversations. While the post-basic midwifery students are on the phone presenting a patient, the midwife can attend to another patient and this decreases the clinic waiting time. If the post-basic midwifery students are not placed at the clinic, the midwife will need to wait on the phone and do everything herself. This will cause a longer patient consultation and ultimately delay further patients.

So, if we see that they are here [laughing] you will do everything and then you write notes down and then you will ask that sister to present for you. Because, you know, she's going to stand there maybe for 15 to 20 minutes to 30 minutes. Imagine how many patients will have been done. And then I wrote her a note and then I asked that sister to present for me. Then I was like, just please stand just next to my cubicle so that I will hear whatever the doctor is asking. And we're having one phone the whole facility. So, she stood outside and then I was busy with the other patient. You won't believe, I did almost... I finished almost everyone while we were still waiting for the doctor to give us orders. And now, like just imagine if I was the one that was waiting. My patients were going to wait as well, you see. (Participant 010)

The third-year midwifery students can also be of great assistance if they are taught well and are found to be competent in ANC activities. The students will be able to function on their own while only seeking confirmation from the midwife. This could result in decreased waiting times.

But we will try and make sure that they are in the same page as us. Because sometimes if you taught them the right things, they can even help you during the day. Because whatever you've taught them right, they will maybe help and just come and verify, Sister, is this right? And then we say yes, and if there's something wrong that they did then you just correct them. Ja. (Participant 010)

4.6.3.3 Subtheme: Staff break times

The staff try to avoid lunch to decrease the patients' waiting time. The midwives will often break for 10-15 minutes so that they can eat and then continue with their work. The staff try to finish all the patients before they take lunch, however, if there are not many patients left in the clinic they will break for lunch.

Normally we avoid to take lunch because we want to shorten their waiting time. What we normally do, we come here, and we just try to push a lot of routines, push, push, push. And then maybe if I'm hungry and then I'm done my routines, and then I will maybe sit for ten minutes, 15 minutes to have something just quickly. And then I will start with other things. And then we make sure that we finish them before we go to lunch. And we really don't take lunch unless we see that they are very few and then we can, we're going to finish them very early. Because even when you finished very early, we are being questioned that we are chasing patients back. (Participant 010)

4.6.3.4 Subtheme: Booking system

To reduce waiting times, the staff do not book many patients when there is a PPIP meeting scheduled. This is mainly due to the staff not knowing how long the meetings will take and they do not want the patients to wait long.

Especially we don't, we only book patients that are coming for scan because we know the lady at the scan she is not part of the meeting. And also, maybe we give few blood results maybe... not more than ten. And then we don't do GTT for that day. Otherwise we try by all means, we try. Because if we have a perinatal meeting, we don't book other things to avoid them waiting for us. (Participant 010)

On Thursdays, the doctor occupies one cubical and there is one less midwife attending to the routine follow-up appointments and new booking patients. Therefore, fewer patients are booked on Thursdays to reduce the waiting time.

Her cubicle is going to be used by doctor and then we're going to be three sisters. So, we also try to arrange so we don't book a lot of patients that day. (Participant 010)

Another measure to reduce long waiting times is to avoid too many new booking patients. The maximum number of new booking patients that can be seen is 30. If more than 30 new booking patients arrive, the patients will be triaged to determine who needs to be booked more urgently and who can be deferred to another day.

Normally we take not more than 30. And also depending how many sisters are in the clinic because sometimes we're short of staff and then we can't take maybe more than 20 a day. But also depending how many routines do we have. Because if we have... if we see we have few routines and then we have a lot of new bookings then we sometimes exceed 30 if all sisters are present. (Participant 010)

They got a book neh... If they phone we are write their name..., we will spread their names... or the patient will come and said I was here at the day hospital, the doctor said I'm pregnant. I'm two months pregnant. Maybe now in the afternoon. We don't take them in the afternoon. Okay, said we are going to give you a date. Is there any problem with you...? We will read the doctor's notes... Or there's no problem... But if there's a problem we of course to take that patient. But if there's no problem, and she is two months, we are going to check our book and then spread... We can give next week... (Participant 002, pilot)

Suggestions to improve the waiting time is to allocate certain days to see the follow-up appointments and to see the new booking patients on separate days.

Urm...the challenges... Unless even if I said the routine must be given another day... The new bookers another day... Let's say Monday, Tuesday is for the new bookers only Wednesday, Thursday, Friday is for the follow ups. (Participant 002, pilot)

4.6.3.5 Subtheme: Staff factors

Further suggestions to improve the waiting times were to make a copy of the MCR and place it into the folder.

We don't... Whereby we don't document but they just make copy and put it inside the folders. Because if you wrote, you must write date and time, and then write blood pressure, warra, warra. But you already wrote on MCR. (Participant 010)

More staff and more equipment are also needed to improve waiting times.

If you have more staff and then more equipment, I'm sure waiting time won't be this long. I think more staff and more equipment, that's only things that we need for now. Because if we have more staff and more equipment, because it's not nice to have more staff and don't have equipment because they will be here and then they will be running around without equipment to work with. And then if we can have more staff and more equipment then I think everything will just flow. (Participant 010)

More staff meetings should be held to promote communication between staff and to find solutions to problems that are faced in the antenatal clinic.

It needs some communication between us. We tried that...we called a meeting for the clerks, for the counsellors for the urine testing nurses and the midwives. The way we can better that is to call meetings every time... And Talk about it... Call meetings and discuss how we can improve... it's just that there's no other way... (Participant 002, pilot)

The staff should communicate the waiting times to the patients and inform them if there are delays. This will promote patients' understanding of the circumstances and the patients will be more tolerant and accepting of waiting times.

Because even if they wait for long. But if they see that, if we explain to them why they must wait, they understand and then they wait. And they even say, no Sister... It's not like, you guys said you were going to wait up until 4 o'clock, but now we're done, and then they become excited and everything is fine. (Participant 010)

4.7 Summary

This chapter described the findings of the study which included the demographics of the participants and the findings of three embedded units of analysis. Through observation, the workflow of the antenatal clinic and ANC activities were described, as well as the patients' waiting times. The perceptions of 12 pregnant women were described with regard to their ANC utilisation. Four themes emerged from the women, which are waiting times, ANC utilisation, barriers to waiting times, and facilitators to waiting times. The perceptions of the midwives working in the antenatal were described under three themes namely, ANC utilisation, barriers to waiting times, and facilitators of waiting times. The essential structure of the study's findings is depicted in Figure 4.4.

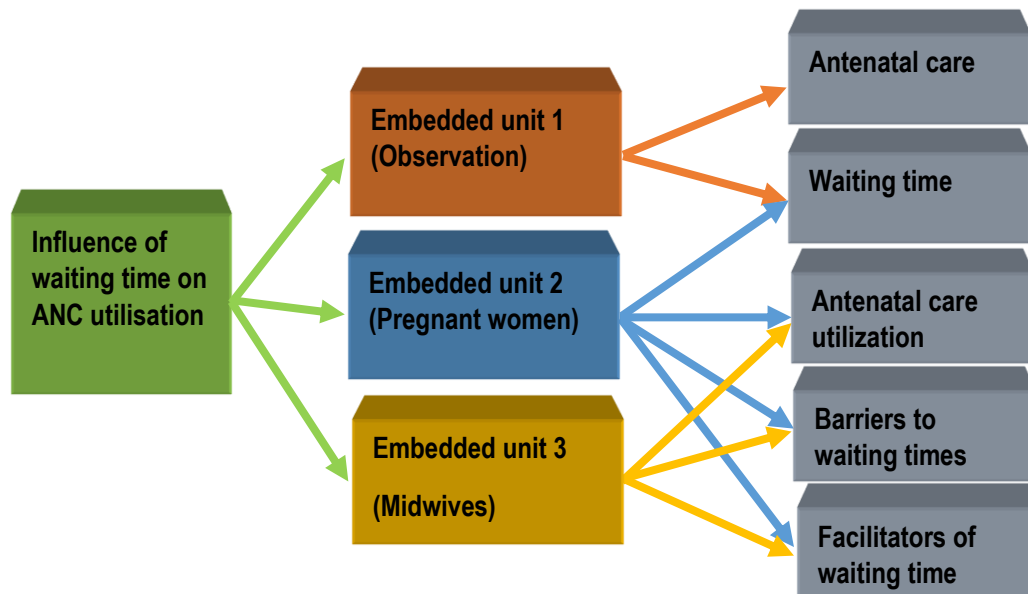


Figure 4.4: Structure of the study's findings

The cause of long waiting times is multifaceted and interrelated, and encompassed a disorganised workflow, staff shortages, staff break times and arrival times, management of patient complications, equipment availability, poor infrastructure and patient numbers.

Factors that can improve waiting times include setting a limit on the number of patients seen each day. Photocopying the MCR to reduce documentation, attending to follow-up appointments and new booking patients on different days, employing more staff and the acquisition of more equipment are further recommendations to reduce waiting times.

ANC utilisation among the study sample was good. The women felt that they need to attend ANC for the wellbeing of their babies and themselves, yet financial constraints were viewed as a barrier to ANC utilisation. Other barriers to ANC utilisation were also described.

4.8 Conclusion

The findings of the influence of waiting times on ANC utilisation were described in this chapter. The findings were presented from three perspectives, namely the researcher's perspective through observation, the pregnant women's perspectives, and the midwives' perspectives. The main themes that were derived from the study were ANC utilisation, waiting times, barriers to waiting times and facilitators of waiting times. The factors that influence waiting times are multifaceted and interrelated, with common subthemes across the different perspectives. In Chapter Five, the discussion, conclusions and recommendations of the research study are presented.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The previous chapter described the findings of the study according to the perspectives of the midwives in the antenatal clinic, the pregnant women as well as the researcher's observation of the antenatal clinic's workflow and patient waiting times.

This chapter encompasses an in-depth discussion of the study's findings that is related to the available literature and the conclusions that were drawn from the study's findings. Furthermore, recommendations are discussed within this chapter based on the study's findings.

5.2 Discussion

Antenatal care utilisation is imperative for the prevention of maternal and infant morbidity and mortality. Long waiting times have been depicted as reasons why women do not attend ANC. The aim of the study was to explore and describe the activities that influence waiting times in the antenatal clinic and whether waiting times influences utilisation of ANC services.

The study's findings that were collected from three data sets revealed barriers to waiting times, facilitators of waiting times, ANC utilisation patterns, and perspectives on waiting times. The results of the study are discussed according to the themes and subthemes as they relate to the research objectives.

5.2.1 Workflow activities influencing waiting times

The workflow activities were different for the women having their first booking visit than for the women attending their follow-up visit. There are different reasons why women have follow-up appointments, namely a routine follow up, ultrasound appointment, oral glucose tolerance test and blood test result appointments. Generally, the women who came for their follow-up appointments had fewer ANC activities and this resulted in shorter waiting times for these women. Also aiding this is the fact that women attending follow-up appointments are seen before the women coming for their initial booking appointments. This, together with many ANC activities, which the new booking patients go through, increased their waiting times.

There were many overlaps between the midwives' perspectives and the perspectives of the pregnant women. The most dominant factor that influenced waiting time was the disorganised

workflow. The lack of patient flow is consistent with other research which stated that 41.6% of healthcare facilities did not have a patient flow system in place (Valla, 2016:73). The pregnant women felt that there is no consistent workflow pattern in the clinic, and this made them feel lost and confused with the process. The women were forced to ask other patients for assistance and seek help from the staff in the antenatal clinic, and this contributed to their waiting time. The midwives acknowledged that there is no pattern to the patient flow and that it was the quickest method to process all the women.

During a midwife's consultation, there were various factors that increased the patients' waiting times. During a routine follow up the abdomen is palpated, the SFM is done and the foetal heart rate is auscultated. The women will receive health education, medication and a follow-up appointment. The midwife will document the consultation in the MCR and the clinic's duplicate form and thereafter the women can go home. The consultation for a booking visit is the same with the addition of the physical assessment. If the uterus is not palpable abdominally a pregnancy test will be requested. The physical examination and the potential for a pregnancy test to be done can increase the waiting times. In both follow-up and booking appointments, the duplicate documentation increases the burden of work and extends the consultation times. Similar findings were found in a study conducted in Uganda on patient flow in an outpatient department. The study discovered that new patients, unscheduled patients and patients starting on ARVs spent more time at the health facility (Colebunders, Bukenya, Pakker, Smith, Boeynaems, Waldron, Muganga, Twijukye, McAdam & Katabira, 2007:150). This indicated increased work activities, therefore the patients spend more time at the facility as opposed to follow-up appointments.

The presence of infections, pregnancy complications and minor ailments of pregnancy can also increase the consultation times. The presence of any of these factors would mean a more in-depth assessment of the patient and management of the patient with additional health education related to the patient's condition. The amount of time the midwife spends with the patient thus depends on the condition of the patient. A woman with a sexually transmitted disease will require medication, a contact slip for the partner and health education. A woman with pregnancy-induced hypertension, severity dependent, will have to have a catheter inserted, an intravenous line erected and will need to be transferred to a higher level of care. This management is consistent with the maternal care guidelines of South Africa (National Department of Health South Africa, 2015:87). In order to transfer a patient to a hospital, the midwife needs to call an obstetrician at the referral hospital who will need to accept the patient before the patient transfer can occur. Thereafter, the midwife needs to arrange an ambulance to transfer the patient to the hospital.

The complexity and unpredictability of an ANC visit were confirmed by another study stating that ANC is a “response-based service” where care is tailored to the individual woman’s needs (Miltenburg et al., 2017:10). Delays with referrals occur when the accepting physician is newly qualified and needs to confirm referral with a senior physician. Other delays are when the telephone is busy and the call cannot be placed. The type of condition and the referral system can increase the midwives’ consultation time and ultimately increase the waiting times of patients. To further compound the complexities caused by the increased consultation time, the midwives in the antenatal clinic share a telephone with the labour ward. This finding is similar to another study’s findings on patient flow systems in antenatal primary healthcare facilities in the Northern Cape where the antenatal clinic’s consultation rooms did not have telephones (Valla, 2016:75). The midwives often have to walk to the labour ward to use the telephone, and the labour ward and the antenatal clinic are at opposite ends of the MOU building. The distance between the two departments and walking between these also extends consultation time. There is no transit area for women who will be transferred to the hospital, therefore the women need to be taken to the labour ward until the ambulance arrives to transfer the patient. All these factors increase consultation time and thus the waiting time of the following patients. The occurrence of these events is unpredictable and therefore would make it difficult to forecast waiting times.

Lack of equipment influences the processing time of patients. There was only one digital blood pressure machine in the antenatal clinic that was used to do all the patients’ blood pressure readings. More equipment would result in faster processing of patients. The follow-up appointments only need their urine analysed, weight and blood pressure taken before they can see the midwives. Yet in some cases, the midwives had to wait on patients because their observations were not done. There were also instances where the patients had to have repeat blood pressure readings due to low battery levels on the machine and the machine being needed elsewhere. Equipment integrity and availability thus influence waiting times in the antenatal clinic. This was also confirmed in a study on healthcare system bottlenecks for maternal and neonatal care, where essential equipment was not available, not working, or inadequate for the needs of the facility (Baker, 2017:58). This was seen as a significant challenge in service provision.

Student midwives in the antenatal clinic influenced the waiting times of the patients. The midwives needed to teach the students. The students would demonstrate their skills on the patients, and the midwives would confirm the findings by repeating the procedure on the patient. Where there were discrepancies between the two findings the midwives needed to do corrective counselling with the student. Teaching the students thus increases the consultation

times. This finding was reiterated in a study conducted on patient waiting times and satisfaction in a tertiary dental school. The study depicted that the facility had rigorous treatment protocols and guidelines that were lengthy and increased consultation times (Motloba, Ncube, Makwakwa, & Machete, 2018:401). Further, the study confirmed that training students increased the waiting times further (Motloba *et al.*, 2018:401). Contrary to the above, post-basic midwifery students were seen to assist in decreasing consultation times when patients needed referrals. These students had confidence and were knowledgeable about referral etiquette. The post-basic student would refer the patients under supervision of the midwife and the midwife could continue with her other consultations. Had the midwife made the referral she would not have been able to attend to her other patients. In this way, post-basic midwifery students can decrease consultation times, which will decrease the waiting times of further patients. No literature was found to substantiate this finding.

Language barriers in the antenatal clinic influenced waiting times. Communication is an essential tool used to obtain relevant information from the patient so that effective management and treatment plans can be implemented. When language barriers exist, the healthcare personnel will spend more time phrasing and rephrasing questions in order to obtain the information they require. This can result in delays during the midwife's consultation or at any point during the ANC process. The lack of understanding from the patient can lead to the patient waiting in the wrong queues, having unnecessary procedures done or wandering around the clinic because they do not know the process.

A study conducted in Geneva on the barriers to reproductive health services highlighted the importance of information in order to understand health care services (Schmidt, Fagnoli, Epiney, & Irion, 2018:5). The study found that a lack of information as a result of poor comprehension or failure of the staff to provide the necessary information, was a barrier for women to access reproductive services (Schmidt *et al.*, 2018:5). That study recognised the role that language barriers play with regard to the utilisation of reproductive services, however, an association between long waiting times and language barriers were not found.

5.2.2 Waiting times within the ANC

Waiting times in the clinic should not be longer than 120 minutes (2 hours) and the total time spent at the facility, including contact time, should not be longer than 180 minutes (3 hours) (National Department of Health, 2015b:8).

The factors that influence waiting times in the antenatal clinic in Gugulethu MOU are multifaceted and varies from day to day operations. There were differences in the waiting

times of women with follow-up appointments and women with a new booking appointment. The women who had their booking appointments waited much longer than the recommended two-hour waiting period. The women with follow-up appointments had contact times from 9-30 minutes, the waiting times were between 105-216 minutes, and the total time spent at the facility ranged from 117-230 minutes. The women who had their booking appointments had 54-191 minutes' contact time, they had waiting times of 284-371 minutes and spent a total of 338-503 minutes at the facility.

Overall, the waiting times in the antenatal clinic were long. In most of the literature, long waiting times have been reported in developed and in developing countries, but their criteria for long waiting times may not be the same as in the South African context. In Atlanta and Michigan of the USA, an average waiting time of 60 minutes and 188 minutes, respectively, was reported as long waiting times (Adamu & Oche, 2013:589). In Nigeria, the average waiting time in Benin was 173 minutes. In other healthcare facilities, also in Nigeria, the antenatal outpatient department had an average waiting time of 24.7 minutes, with the longest waiting time being 36.4 minutes and the shortest 15.8 minutes (Ogu, Ntoimo, & Okonofua, 2017:10). In Kampala Uganda, the average waiting time in a clinic was 157 minutes (Colebunders *et al.*, 2007:150). The follow-up appointments' waiting times can be viewed as similar with other countries, however, the new booking appointments' waiting times were much longer. The factors that influence waiting times are multifaceted and unpredictable and is often context specific. This is why there are no consistent waiting times on which to benchmark.

5.2.3 Influence of waiting times on ANC attendance

In Swaziland, long waiting times were viewed as a barrier to ANC (Ganga-Limando & Gule, 2015:362). This finding is not consistent with the current study's findings. While most of the women had long waiting times, it did not prevent them from seeking ANC. The women's perceptions of waiting times also varied. Some of the women felt that they did not wait long or that their waiting time was acceptable. Others felt that the waiting times were very long. Chu, Westbrook, Njue-Marendes, Giordano and Dang (2019:4) explain that patients benchmark their past experiences with the healthcare system and waiting time norms with their current experiences of waiting times. When a patient's perceived waiting time is shorter than their expectation of the waiting time, the patients judge their waiting time as favourable (Chu, Westbrook, Njue-Marendes, Giordano & Dang, 2019:4). The study further elaborates that if there was a delay with the waiting time, it was due to something important or unavoidable taking place (Chu *et al.*, 2019:4). This provides an explanation for the various perceptions of the waiting times at the Gugulethu antenatal clinic.

Eleven of the 12 participants had perfect ANC attendance. The one participant defaulted ANC once because she did not have money for transport. A lack of finances for transport was also cited as a barrier to ANC in Mozambique (Gong *et al.*, 2019:5). Further, two participants booked their pregnancies late. The one woman had an unplanned pregnancy and had conflicting feelings on whether to keep the baby or terminate the pregnancy. This barrier to ANC utilisation was reiterated by another study which demonstrated that women with unintended pregnancies were less likely to attend ANC (Rahman, Rahman, Tareque, Ferdos, & Jesmin, 2016:6). The other woman was of advanced maternal age and thought that she could no longer conceive. She realised late into the pregnancy that she was pregnant and this resulted in her booking the pregnancy late.

Within the context of this study, the women felt that the waiting times were long, but it did not deter them from seeking ANC. The women's belief in the importance of ANC motivated them to seek ANC. The women cited that it is a must to have ANC and it is important to attend ANC so that complications with the foetus and the woman can be detected and managed. The participants' views on the importance of ANC was reiterated by a study conducted in Mozambique on the missed opportunities for ANC. The study found that the women viewed ANC as a duty and were obligated to attend the service (Gong *et al.*, 2019:3). The participants were motivated to attend ANC as it was seen as an opportunity to monitor the pregnancy and avoid poor health outcomes (Gong *et al.*, 2019:3). These findings are congruent with the current study's findings.

5.2.4 Barriers to waiting times that influence ANC utilization

There were many barriers to waiting times in the antenatal clinic. A shortage of staff in the antenatal clinic would mean that there is a decreased capacity to attend to the number of patients in the clinic. The shortage of staff was consistent with the findings of a study on healthcare systems' bottlenecks for maternal and new-born care. The study found that the availability of healthcare workers was inadequate to meet the demands of the population (Baker, 2017:21).

Staff arrival times and work time also influenced waiting times. Staff arrived on duty from 07:30 to 08:00. If the staff start processing the patients from 07:00 the patients could go home earlier. A midwife noted that even though at times the staff arrive late on duty it did not affect the waiting times as the nurse needs to process the patients before the patients are seen by the midwife. The midwives can assist the nurses with the processing of patients in order to expedite the process for the patients. These factors influence the flow of work in the antenatal clinic and ultimately waiting times in the antenatal clinic. Similarly, Zhu, Heng and Teow

(2012:711) also found that staff lateness resulted in longer waiting times for the patients. Another study also reiterated this finding by stating that physician tardiness was a contributor to long waiting times in an operating room (Zafar, Suri, Nguyen, Petrash, & Fazal, 2016:1192).

Patients' consultation with the midwives also influences waiting times. A study on understanding the pre-procedural patient flow in interventional radiology found that patient acuity, related to priority, resulted in a delay with the after coming patients (Zafar *et al.*, 2016:1191). The presence of infection, hypertensive disorders, HIV and minor ailments of pregnancy can lengthen a routine ANC consultation. The antenatal clinic predominantly attends to low-risk women and when complications arise the patients need referral to a higher level of care.

The referral system also creates a delay with the consultation as the midwives need to walk to the labour ward and retrieve the telephone in order to make the referral. The accepting physician then further influences this process. If the accepting physician is a novice, the novice physician will consult with a senior physician regarding the referral. This lengthened the telephonic call. The longer the midwife is on the telephone, the less time she spends completing her consultation with the patient, which delays the patients that still need to be seen. Other issues with telephone referrals that cause a delay with the consultation are when the telephone line to the referral hospital is engaged. This would result in repeated calls to the referral facility. When the labour ward staff are using the telephone, the antenatal clinic midwife needs to wait in order to complete her consultation. This increases the time spent with one patient. Similar findings were found in a systematic review of strategies that affect waiting times in outpatient departments. The systematic review found that longer waiting times were related to preparation times, referral management and booking procedures (Naiker, FitzGerald, Dulhunty, & Rosemann, 2018:291). Similarly, another study by Suss, Bhuiyan, Demirli and Batist (2017:533) discovered that poor information handover between healthcare professionals could result in patient delays (Suss *et al.*, 2017:533). This was especially true in circumstances where further clarification or instructions were needed during the information handover (Suss *et al.*, 2017:533).

The flow of patients in the antenatal clinic influenced the waiting times. There is no structured patient flow in the antenatal clinic. The patients would observe which rooms were empty and then enter the rooms. The patients would also ask one another which activities they were supposed to complete and use that as a guide to determine which activities still needed to be completed. The patients felt confused about the process. As a result of the disorganised patient flow, the patients would often lose their place in the queue. The women who arrived first at the clinic were not necessarily seen first by the midwife and this contributed to individual

patients' waiting times. Similarly, irregular calling sequence, where patients who arrived first in the clinic are seen later, was found in a study conducted on long waiting times in outpatients departments (Zhu *et al.*, 2012:711). The irregular calling sequence was related to patients temporarily leaving the facility, no response when their names were called, and patients arriving earlier than their scheduled time (Zhu *et al.*, 2012:711).

Language barriers were also seen to increase the patients' waiting times. The staff in the antenatal clinic mainly spoke Xhosa. The women who did not speak Xhosa were lost and did not understand the patient flow. This resulted in the ANC activities not being done or the woman realising late that activities should be done. This caused the woman to lose her place in the queue which delayed her consultation with the midwife. A direct association between language barriers and long waiting times was not found, however, Kim, Choi, Oh, Moon, You and Woo (2019:12) discovered that language barriers made it difficult for women to use ANC services. Furthermore, minority ethnic groups with language barriers and high illiteracy rates also acted as a barrier to ANC (Kim *et al.*, 2019:15).

The lack of equipment and infrastructure also has an influence on the waiting times. The nurses in the antenatal clinic use one blood pressure machine to take all the patients' blood pressure measurements. The removal of the blood pressure machine and a run-down battery of the machine resulted in patients' blood pressures no longer being processed. When the observations are not done, especially for the follow-up appointments, the midwives will not attend to the patient. This results in a delay in the midwife consultation which affects individual patients and is a product of the disorganised patient flow. The order in which the women had their blood pressure measured varied; it was not done according to a numbering system, yet the follow-up appointments were called according to a numbering system for the midwife consultation. Therefore, when the blood pressure was taken, and the patient's position in the queue for the midwife had an influence on the patient's waiting time.

The antenatal clinic has an additional room that was not used due to the door being broken. One of the labour ward's midwives used this additional room to assist the clinic staff with their patient load. As a result of an additional venue not being available, the midwives did not receive assistance. The more midwives available to attend to the patients, the faster the patients will be seen and the waiting time will be decreased. Moreover, the clinic has four toilet cubicles yet only two of the four are in working order. This resulted in a delay when the urine analysis had to be done and the patients were often queuing at the toilet. A follow-up patient's delay with urine analysis can influence when the patient is seen by the midwife. This result is similar to findings by Baker (2017:58), who stated that equipment and infrastructure were not

available, not in working order or inadequate to meet the needs of the facility. This challenge compounded waiting times in maternal and new-born care.

Managerial decisions also influence waiting times. A decision from management was made to have duplicate documentation so that there is continuity of care should the MCR get lost. The duplicate documentation resulted in a delay in the midwives' consultation which affected the patients. This finding is congruent with a study that found that administrative tasks and report writing may cause long patient waiting times (Zhu *et al.*, 2012:710).

Zafar *et al.*, (2016:1192) found that when the staffing quota and the patient load were not matched it contributed to delays within the facility. This finding was echoed in this study, where high patient volumes resulted in longer waiting times. In the context of the study, this was compounded by the fact that the follow-up appointments are seen first before the new booking appointments. Therefore, many follow-up appointments will result in longer waiting times for the new booking appointments.

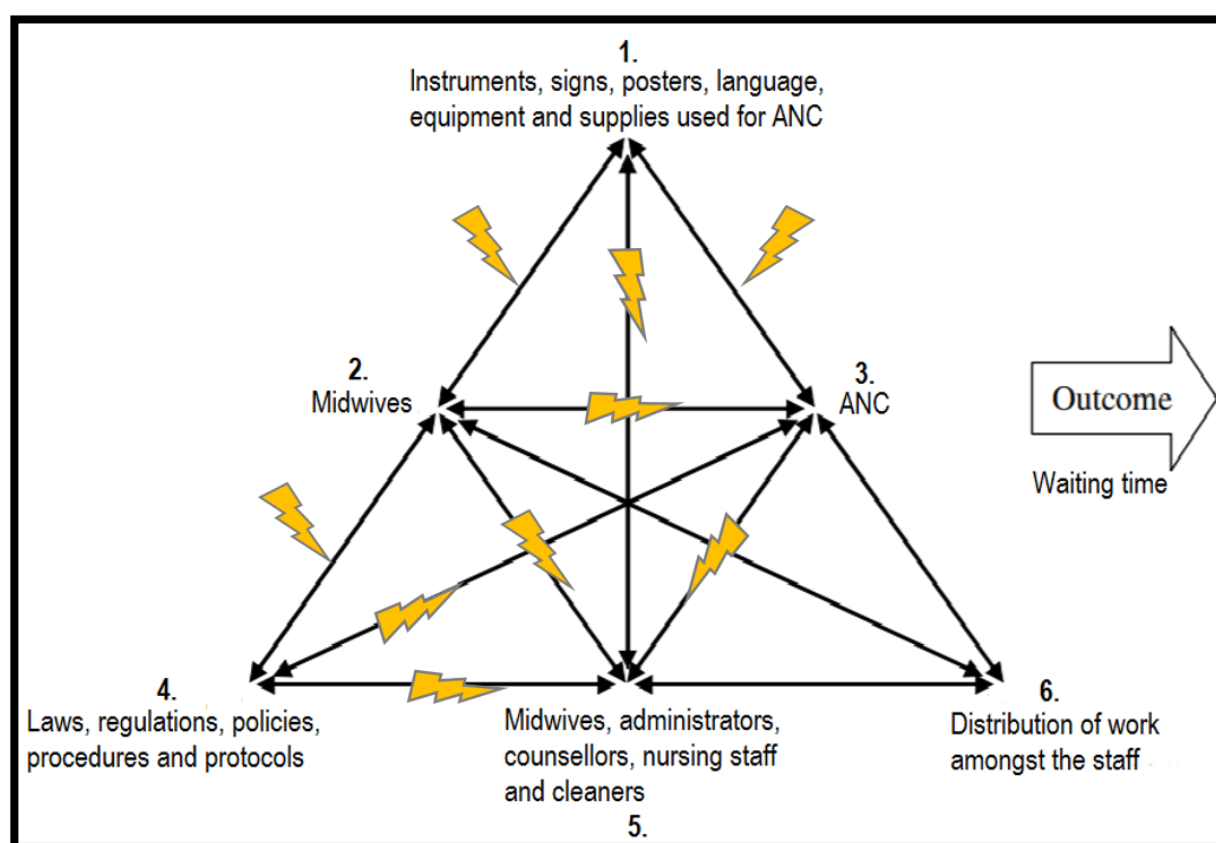


Figure 5.1: Workflow analysis with constrictions

Figure 5.1 is a graphic depiction of where the barriers to waiting times occurred in the study. The shortage of staff and arrival times were constrictions between 2 and 5, 2 and 3 and 5 and 3, on the diagram. Patient acuity was a constriction between 2 and 3. Inadequate equipment resulted in constrictions between 1 and 2, 1 and 5 and 1 and 3. Referral delays resulted in constrictions between 2 and 4, 4 and 5, 2 and 5 and 2 and 3. Language barriers were constrictions between 2 and 3 and 5 and 3. The duplicate documentation was a constriction between 4 and 3. It becomes apparent from the diagram that the factors that influence waiting times are complex and often interconnected with a causal relationship.

5.2.5 Midwives perceptions on improving waiting times

The midwives are aware of the long waiting times in the clinic and have implemented measures to reduce waiting times. These included dispensing medication from the ward stock and replacing it with the medication that was prescribed. This was done in an attempt to prevent the patients from having to wait at the pharmacy. Staff also do not take lunch breaks if there are many patients in order to decrease the patients' waiting times.

Other measures that could be used to improve waiting times, according to the midwives, would be to copy the MCR and keep the copy in the folder should the MCR get lost. At present, the midwives are completing a separate form with duplicate information on it. Perhaps it is more costly to photocopy the MCR's information as it is spread over a couple of pages and the duplicate form that was designed is a single page, printed double-sided.

Another measure to decrease the waiting times was to attend to new booking appointments and follow-up appointments on different days. This will have significant implications for the new booking appointments as they are attended after the follow-up appointments. This measure will decrease the waiting time for the new booking appointments.

A further recommendation was to have a set limit on the number of women attending the clinic each day. This can be achieved through a booking system for follow-up appointments and for new booking patients. This will not eliminate waiting times, but it can reduce the waiting times. However, even though women are given appointments, they may still arrive late for their appointments which can increase waiting times. It is anticipated that implementing a scheduling system will reduce patient waiting times in the clinic (Naiker *et al.*, 2018:291). The benefits of a scheduling system are that it makes the patients' appointment days more predictable and they will be better able to plan when they will leave the facility (Gong *et al.*, 2019:6).

The midwives felt that when the clinic is full, assistance from other staff members will help decrease the waiting times. The more staff there is, the quicker the patients will be seen. However, the assistance of the staff from the labour ward would also depend on how busy the labour ward is. Should the labour ward be busy, it would not be feasible to use staff members from the labour ward to assist in the ANC clinic. This finding was also echoed by Baker (2017:58), who stated that staff might not always be available to offer assistance during unforeseeable workloads.

One of the significant causes of delays in a clinic was the unavailability of equipment (Khatibi *et al.*, 2015 cited by Anisi *et al.*, 2017:31). More equipment was suggested as a means to decrease the waiting time in the antenatal clinic. Equipment failure and lack of equipment resulted in a delay in the antenatal clinic. There is one blood pressure device in the facility and all the patients' blood pressures need to be taken with that one machine. More blood pressure machines would mean that patients are processed quicker. The midwives have also reported that they had to wait on patients because their observations were not done. The addition of another blood pressure machine would be beneficial in the case when one device malfunctions or is needed in the labour ward. If one device malfunctions, the patients can still be processed as the other device is available to process the patients. Strategies to improve patient flow in the clinic and to reduce waiting times include the implementation time of tasks and faster access to equipment and tools (Anisi *et al.*, 2017:31).

5.3 Limitations of the study

The diversity of the study sample was compromised. There were mainly black women at the clinic, and one coloured woman was at the antenatal clinic during the data collection period when the researcher was at the clinic. The woman arrived late at the clinic and therefore was not considered for inclusion into the study.

Only two out of the four midwives working in the antenatal clinic were included in the study. Of the two included midwife interviews, one was the pilot interview. The other two midwives in the clinic declined to participate in the study. This decreases the depth of information that could have been obtained.

Moreover, the researcher does not understand Xhosa, which is the preferred language of communication in the clinic. This made certain aspects of the observation challenging. The researcher could not confirm certain information that was given to patients due to the language barrier. This influenced the trustworthiness of the observational data.

Member checking was also not done with all the participants. They were all contacted, but only three responded and confirmed the findings of the study.

5.4 Conclusions

There were many factors that influenced waiting times in the antenatal clinic. The main reasons for the increase in waiting times were disorganised patient flow, management of patient conditions, patient referrals, documentation, shortages of staff, staff arrival times, staff break times, language barriers, poor infrastructure, equipment availability, poor managerial support, patient numbers, staff meetings and study recruitment. Some of the barriers to waiting times are unpredictable and difficult to control. Many of the study participants experienced the waiting time as long. This finding was more prominent among the women attending their initial booking visit than among those attending their follow-up appointments.

Among the study participants, there were no barriers to ANC utilisation except for one participant. Her reason for defaulting ANC was due to a lack of finances for transportation. Other women sought ANC late in their pregnancies, and the reasons were not related to the long waiting times.

The researcher identified factors that influence waiting times in the antenatal clinic, but in the study's sample, ANC utilisation was not influenced by long waiting times.

5.5 Recommendations

Recommendations were made based on the study's findings. Four recommendations were made and are discussed next.

5.5.1 Recommendation one: Improving communication

Poor communication was seen as a cause of long waiting times. Some women felt that they do not have the freedom to complain. A suggestion box/complaints box with stationary should be present and visible in the antenatal clinic. This will allow the staff to reflect on their practices and try and accommodate the patients' needs.

The staff should not inform the patients to arrive at 06:30 when the clinic's operating hours are 07:00-16:00. Informing the patients to be at the clinic at 07:00 is more appropriate.

The workflow in the clinic is unpredictable, therefore if there are delays this should be communicated to the patients. There should also be posters placed in the clinic on the acceptable waiting times in the clinic.

There are foreign national women who attend the Gugulethu MOU and often have difficulty communicating with the staff. Employing an interpreter would be beneficial for these women and it would assist in obtaining more accurate information.

5.5.2 Recommendation two: Acquisition of equipment and effective use of infrastructure

The labour ward and the antenatal clinic share a telephone. The addition of two telephones will reduce waiting times as it will prevent the midwives from walking to the labour ward to retrieve the telephone.

There was also only one blood pressure device that was used in the antenatal clinic. When this device was not working the patients had to wait as their blood pressure measurements could not be taken. The addition of a second blood pressure device will be beneficial. The two blood pressure devices can be used concurrently in the antenatal clinic so that the patients can be processed quicker. A second blood pressure device will also allow the nurses to continue to process patients if one of the blood pressure devices is out of order.

There are also four counselling rooms. Two rooms can be used for the HCT (HIV counselling and testing), one room can be used to take the blood pressure measurements, and one room can be used for the patients' history taking. The seminar room can be used as a transit lounge/ holding area where the patients who are being referred to the hospital can wait for the ambulance. This suggestion will eliminate the time spent by the midwife walking to the labour ward to ascertain if there are beds and then escorting the patient to the labour ward to manage her further and prepare her for the transfer to the hospital.

5.5.3 Recommendation three: Implementing an appointment system

At present, women are given appointments and their names are written in an A4 book for a specific date. An electronic appointment system can be used to capture the appointments. This will also limit the number of women who arrive at the facility. The electronic appointment system will allow that women can come in at designated times throughout the day.

At present, the clinic attends to new booking appointments and follow-up appointments on the same day, yet the workflow for the new booking appointments and the follow-up appointments are different. It could be beneficial to have certain days in which the midwives attend to follow-up appointments only, and new booking appointments on separate days. This could decrease the waiting times for the new booking patients.

5.5.4 Recommendation four: Improving patient flow

A common theme that emerged was the disorganised patient flow in the clinic. Posters can be created that explains the patient flow and placed at strategic sites in the antenatal clinic. The disorganised patient flow can also be overcome by having designated queue marshals that direct patients through the ANC process. Another alternative could be to orientate the women on the activities that they should undertake while they are in the antenatal clinic.

The new booking appointments were not seen according to who arrived first at the clinic. Therefore, patients who arrived first at the clinic were seen last or lost their place in the queue due to the disorganised patient flow. A numbering system would correct this issue. Patients can be allocated numbers according to when they arrive and the midwife consultations should be done according to the numbers allocated.

5.5.5 Future research

The following areas for future research are proposed:

- Explore the patients' perceptions of safety when attending ANC
- Explore the influence of language barriers on ANC utilisation
- Implementing a patient flow model (e.g. Lean method) to determine whether waiting times are improved

5.6 Dissemination

A copy of the research findings with the recommendations will be given to the Gugulethu MOU. This will allow the facility manager to ascertain the feasibility of the recommendations.

The researcher further aims to submit an article in an accredited peer-reviewed journal. The thesis will be available electronically on the university's website, via SUN Scholar. The researcher plans to promote the research via various platforms such as the Department of Health Research day, Stellenbosch University's Research day, and at conferences and congresses.

5.7 Conclusion

In this chapter, the research findings were discussed in conjunction with the research objectives. The research question was answered by analysing three units of analysis. The workflow activities and patient flow in the antenatal clinic were mapped, together with their

waiting times. The women's ANC utilisation was explored along with their perceptions on the waiting times. The women demonstrated good ANC attendance even though most indicated that there were long waiting times in the clinic. The midwives' perceptions of the barriers to waiting times were explored and methods for improving the waiting times were offered.

The interplay between the workflow activities and the healthcare staff were unpredictable and will be difficult to control. Improvements to the waiting times can be made, but the waiting time cannot be eliminated altogether.

The study's findings were that while there are many factors that caused long waiting times, the long waiting times did not influence women's decisions in seeking ANC.

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Appendix 1: Ethical approval from Stellenbosch University



28/04/2019

Project Reference #: 7859

Ethics Reference #: S18/08/159

Title: Exploration of the influence of waiting times in an antenatal clinic on the utilization of Basic Antenatal Care (BANC) in a Midwifery Obstetric Unit: Descriptive Case study in the Western Cape, South Africa.

Dear Miss Justine Carla Baron ,

We refer to your amendment request # 1 dated 26 April 2019.

The Health Research Ethics Committee (HREC) reviewed and approved the following amendment through an expedited review process:

1. To change study site from Delft MOU to Gugulethu MOU.

The following amended documentation was reviewed and approved:

1. Study protocol dated 26 April 2019

Where to submit any documentation

Kindly note that the HREC uses an electronic ethics review management system, *Infonetica*, to manage ethics applications and ethics review process. To submit any documentation to HREC, please click on the following link: <https://applyethics.sun.ac.za>.

Please remember to use your project ID 7859 and ethics reference number (S18/08/159) on any documents or correspondence with the HREC/UREC concerning your research protocol.

Yours sincerely,

Mrs. Melody Shana,

Coordinator,

HREC1.

National Health Research Ethics Council (NHREC) Registration Number:

REC-130408-012 (HREC1)•REC-230208-010 (HREC2)

Federal Wide Assurance Number: 00001372

Office of Human Research Protections (OHRP) Institutional Review Board (IRB) Number:

IRB0005240 (HREC1)•IRB0005239 (HREC2)

Appendix 2: Permission obtained from Department of Health



**Western Cape
Government**

Health

**Health Impact Assessment
Health Research sub-directorate**

Health.Research@westerncape.gov.za

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5th Floor, Norton Rose House, 8 Riebeeck Street, Cape Town, 8001

www.capegateway.gov.za

REFERENCE: WC_201810_033

ENQUIRIES: Dr Sabela Petros

Stellenbosch University

Francie Van Zijl Drive

Parow

Cape Town

7305

For attention: Ms Justine Baron

Re: Exploration of the influence of waiting times in an antenatal clinic on the utilization of Basic Antenatal Care (BANC) in a Midwifery Obstetric Unit: Descriptive Case study in the Western Cape, South Africa

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact the following person to assist you with any further enquiries in accessing the following sites:

Gugulethu CHC

Dr Jennie Morgan

021 637 1280

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. By being granted access to provincial health facilities, you are expressing consent to provide the department with an electronic copy of the final feedback (**annexure 9**) within six months of completion of your project. This can be submitted to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).

3. In the event where the research project goes beyond the *estimated completion date* which was submitted, researchers are expected to complete and submit a progress report (**Annexure 8**) to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).
4. The reference number above should be quoted in all future correspondence.

Yours sincerely



DR M MOODLEY

DIRECTOR: HEALTH IMPACT ASSESSMENT

11/07/2019

Appendix 3: Participant information leaflet and declaration of consent by participant and investigator

Title of the research project: Exploration of the influence of waiting times in an antenatal clinic on the utilisation of basic antenatal care (BANC) in a Midwifery Obstetric Unit: Descriptive case study in the Western Cape, South Africa

Reference number:

Principle investigator: Justine Carla Baron

Address: Faculty of Medicine and Health Sciences: Division of Nursing and Midwifery
Francie Van Zyl Drive
Tygerberg
7500
South Africa

Contact number: 072 073 8199

Dear Participant

You are invited to participate in the above-mentioned research study. The aim of this study is to explore and describe the activities in the antenatal clinic that affects the patient's waiting times and the effect this has on the use of antenatal services.

You are being asked to participate in this study because your experiences and ideas on waiting times are important to the study.

Procedure

Your involvement will include a face-to-face interview with the researcher, Justine Baron in English or Afrikaans. A trained fieldworker will be used to do face-to-face interviews in Xhosa where Xhosa is the participants preferred language. The interviews will take place at Gugulethu MOU in a private room. The interviews will be recorded using an audio recorder. The interviews will last between 30-60- minutes. The audio recordings will be transcribed (typed out word for word) by a professional transcriber.

Benefits

The study findings can be used to improve the waiting times in the antenatal clinic as well as the patient and worker satisfaction.

Voluntary participation withdrawal

Involvement in this study is voluntary. You are not under any obligation to participate in the study. You are free to leave the study at any time without repercussions. In the case of withdrawal from the study, consent will be obtained from you to include any information obtained prior to withdrawal from the study.

Risks

There are no foreseeable risks to you associated with the study. Should you become distressed during the interview counselling will be arranged for you.

Confidentiality

All information collected from you will be kept confidential. If an interpreter is used, the interpreter will have to sign a confidentiality agreement before the interview. Before the audio recordings are transcribed, the transcriber will also sign a confidentiality agreement. The audio recordings and the transcriptions will be kept and stored in a safe and secure place. Only my supervisor and I will have access to your interview. Before the interview, you will be given a code so that your identity will be protected

The results from the study may be published for research purposes but your identity will be protected.

Payment

You will not receive payment for your involvement in the study.

Cost

This study will not cost you anything except your time.

Ethical approval

The study has been approved by the Health Research Ethics Committee of Stellenbosch University and the Western Cape Government. Gugulethu MOU has also granted permission to conduct the study on their premises.

Questions

If you have any questions, feel free to contact Justine Baron on 072 0738199.

Thank you for your time and willingness to participate in the research study. Please sign the attached consent form if you wish to participate in the study.

Yours Sincerely

Justine Baron

(Principal Investigator)

CONSENT FORM

I.....agree to take part in the research study:

(Full name and surname)

I hereby confirm that:

- ☐ I have read and understood the attached information leaflet
- ☐ I have been provided the opportunity to ask questions and my questions have been answered in full
- ☐ I understand that my involvement in the study is voluntary and I have not been forced or bribed to participate in the study
- ☐ I understand that I may leave the study at any time without any repercussions
- ☐ I consent to a digital audio recording of the interview

Participant

Witness

Name:

Name:

Signature:

Signature:

Date:

Date:

Declaration by the investigator

I..... declare that: (Name and surname)

- I explained the information in this document to (Participant's name)
- I encouraged her to ask questions and took sufficient time to answer the questions
- I am confident that she adequately understands the various aspects of the research as discussed in the leaflet

Investigator

Witness

Name:

Name:

Signature:

Signature:

Date:

Date:

Declaration by the interpreter

I.....declare that:

(Name and surname)

- I assisted the investigator, to explain the information in the leaflet and this document to, using the language medium Xhosa
- We encouraged her to ask questions and took sufficient time to answer the questions
- I communicated a factually correct account of what was related to me
- I am confident that the participant adequately understands the information provided and has had all her questions answered adequately

Interpreter

Witness

Name:

Name:

Signature:

Signature:

Date:

Date:

Appendix 4: Interview guide for the pregnant women

SECTION A: DEMOGRAPHIC INFORMATION (ASKED BY THE RESEARCHER)

Age	
Level of education	
Single/ married/ partner	
Gravidity	
Parity	
Gestational age	
How many times have you attended the antenatal clinic for this Pregnancy?	

SECTION B: INTERVIEW GUIDE FOR THE PREGNANT WOMEN

RO1 To describe the actual workflow activities within the MOU which influence the waiting times within a Midwifery Obstetric Unit in the Cape Metropole of the Western Cape.

Grand tour question: Tell me about the activities in the ANC from when you arrive at the clinic till when you leave

- What happens when you visit the ANC?
- Why do you come to these activities?
- Explain what happens during an ANC visit.

RO2 To determine the influence of waiting times, on ANC attendance among pregnant women, within the MOU.

Grand tour question: Tell me about your waiting times in the antenatal clinic from the time you arrive at the clinic until you leave the clinic?

- How long do you spend waiting to be seen when you come for your antenatal visit?
- Where do you wait the longest?

Grand tour question: Tell me about your ANC attendance?

- How often do you come to the clinic?
- What were the reasons that you did not attend ANC?

RO3 To determine the barriers to waiting times within the MOU that influence ANC utilization.

Grand tour question: What do you think are the causes of waiting times in the clinic?

- Why, do you think, you must wait in the clinic?
- What are the reasons for waiting times in the antenatal clinic?

Appendix 5: Interview guide for the midwives

SECTION A: DEMOGRAPHIC INFORMATION

Tell me about yourself

- How long have you been a midwife?
- How long have you been working at Gugulethu antenatal clinic?

SECTION B: INTERVIEW GUIDE FOR MIDWIVES

RO1 To describe the actual workflow activities within the MOUs which influence the waiting times within a Midwifery Obstetric Unit in the Cape Metropole of the Western Cape.

Grand tour question tell me about the activities for a woman having a booking visit

- Explain the clinic process of a woman coming for a booking visit

Grand tour question: tell me about the activities for a woman having a follow up visit

- What is the process that she will follow for an ANC visit?
- What is the pathway for a follow up visit?

RO3 To determine the barriers to waiting times within the MOU that influence ANC utilization

Grand tour question: Let's talk about the challenges with the use of ANC services?

- What are some of the reasons why women do not use antenatal care services?
- Tell me about ANC utilization

Grand tour question: Let's talk about what you think and feel about the waiting times during ANC visit

- What are the causes of waiting times in the ANC?

RO4 To determine the midwives' perceptions on improving waiting times in the antenatal clinic in order to improve ANC utilization.

Grand tour question: let's talk about what can be done to decrease the waiting times?

- How can waiting times in the clinic be improved?
- How can you prevent long waiting times?

Appendix 6: Confidentiality agreement with the data transcriber

Confidentiality agreement for data transcriber

I hereby declare that:

- I agree to transcribe Ms J. C. Baron's research data on the topic: Waiting times in the antenatal clinics' and the effects on the utilization of Basic Antenatal Care (BANC): a descriptive exploratory case study
- All digitally recorded information and transcriptions will be kept confidential on a permanent basis
- I will not inform any one about the content of the digital recordings or the transcribed documents
- I will not make duplicates of the recorded interviews or transcription records
- The recorded interviews will be deleted after the transcription has been done
- None of the content will be forwarded to any person

Transcriber

Name: J. M. Martinelli

Signature: [Handwritten Signature]

Date: 18/11/2019

Appendix 7: Extract of the transcribed interview

NAME OF AUDIO : **Part. Interview 010**

LENGTH OF AUDIO : **64:12**

TRANSCRIPTION LEGEND : **RESEARCHER R**

: **INTERVIEWEE I**

R Interview of participant 010. Can you tell me about your career as a midwife?

I My career as a midwife. Okay. I didn't do yet advanced midwifery, I'm still a general professional nurse. But luckily, I got a post here at maternity, so I became a midwife like that way.

R Okay. And how long have been practising as a midwife?

I Since my com-serve, 2015, I was at Mowbray and then I got a post here 2016. So, I think it's plus, minus four years now.

R Plus, minus four years. All right. And how long have you been working here?

I Here it's three years because started here 2016, so it's 2016, 2017, 2018. Ja, it's three years, four. This is my fourth year.

R Fourth year here and then the others was at Mowbray.

I Yes, one year was at Mowbray, 2015. But I was still a community nurse there. I was doing my community service.

R Okay. So, you did your community service at Mowbray and then rest of the time you worked at Gugulethu.

I Yes.

R MOU, okay. Good. Can you tell me about the process of... Ja, the process that a booking person would go through when they come to the clinic?

I Yo, it's a very long process. Normally because we have our routine patients that we like book for the time. So, what we normally do in the morning, we normally write down all the names of all the new bookings. And sometimes we get a lot of new bookings in a day. So, we are forced to return them and then take a certain number of them. And then what we normally do is in the mornings we take... we write them down so that we know the number that we have for the day. And then we first do our routines and then while we're doing our routines, us sisters, the new bookers must go and open the folders at the reception. They must go to counsellors for HIV testing, they must go to nurses for history taking so that we know their history before they come to us. And then when they come to us, depending how far the patient is and then the questions, we send the patient to ultrasound. If the patient is already five months, then we

don't send those ones to ultrasound. And also, it depends like on the medical history of the patient. If the patient is having like maybe chronic hypertension with treatment, that one also depends how many tablets does the patient drink a day. And the patient maybe is on Ridaq and Enalapril. That patient must discuss with Groote Schuur. But if the patient is on one, maybe just Ridaq, that one must discuss with Mowbray. So, it also depends on the medical history of the patient, and also obstetric history of the patient because sometimes the patient is previous Caesar times four, times three and then that one we must send immediately to Mowbray. But if the patient is only the previous Caesar x1 and then we do a routine check-up here and then at 36 weeks we send the patient to Mowbray. And also, BMI. So, there are a lot of things that we look after [laughs] before we decide like where the patient is going to do the routine check-up and follow up and everything. So, that's why it takes very long and we need a certain number of them because there are a lot of things that we look after when they come for the first time.

R So, what is your cap that you take? How many?

I Normally we take not more than 30.

R Okay.

I And also depending how many sisters are in the clinic because sometimes we're short of staff and then we can't take maybe more than 20 a day. But our cut number is 30 patients a day.

R 30 patients a day.

I Yes. But also depending how many routines do we have. Because if we have... if we see we have few routines and then we have a lot of new bookings then we sometimes exceed 30 if all sisters are present.

R Okay. So, when the patients come or the bookings, they come, they will go first to reception.

I They first... the first wait for us to come and sort them and then we take that particular number. And then after that we know how many number do we have and we know who is taken for the day. Because sometimes, you know, most patients they are too clever. [Laughs] If we don't write their names down, they can just come and sit there and make a lot of things not to be in order. So, we first sort them, we write them in the book and then we know the number that we have for the day. And then after that they go to reception for folders to be opened. Oh no, before they go to reception for folders to be opened our nurse give them book. And the one that come from the other clinics they normally have their own books because there are patients that are referred here by BANC Clinic. So, also those ones we take, but then, gogo, they already have their books. So, we don't give them new books. Then after they're all given books then they go to reception and the clerk come and collect their IDs and then go to the reception to open folders for them. And then they go one by one to reception because we ask them particular questions like next of kin, contact

details and their contact details, their addresses and also if they're working or not working, all the stuff so that it's going to be filled in the folder and also be captured in the computer.

R Okay. So, then you sort them out here first to determine, okay, we need 30 bookings only. If you exceed that, do you give them follow up appointment?

I So, if we exceed for a day, like let's say maybe we have 32 patients in that particular day and maybe we have five sisters that are present to work for that particular day and we have few bookings, and then maybe we take the 32. No, we do about 32. But if we're short staffed and then we have a lot, for sometimes we get more than 30, maybe 40 something patients, and then we are forced to return the others and then take the ones that are high risks. So, we screen them. Maybe we ask how many months are you? Because if that patient is still early... Are you on any medication? No, I'm not. Are you sick? No, I'm not sick, I just came to book. And then we're forced to give those ones a date to come back, and then take maybe the ones that are already late and maybe the ones that are sick for that particular day, and the ones that are maybe high risks like hypertension on treatment because they must stop the treatment that they are in and then they must start in like a different treatment. Maybe the ones that are already diabetic on treatment so we are forced to take those ones because we must transfer them to Groote Schuur or Mowbray.

R Okay. So, after they come back from reception then where do they go to?

I After they open folders they must go to counsellors to be tested, because the counsellors, there are stickers to paste on the forms that they fill in. And then after that... but it depends. Maybe a few will go to counsellors, others will go to history taking but there are a lot. So, they must split for the thingy to go.

Appendix 8: Declarations by language and technical editor



Leatitia Romero
Professional Copy-Editor, Translator and Proofreader
(BA HONS)

Cell: 083 236 4536
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www.betweenthelinesediting.co.za

28 November 2019

To whom it may concern:

I hereby confirm that I have edited the dissertation entitled: "EXPLORATION OF THE INFLUENCE OF WAITING TIMES IN AN ANTENATAL CLINIC ON THE UTILISATION OF BASIC ANTENATAL CARE (BANC) IN A MIDWIFERY OBSTETRIC UNIT: DESCRIPTIVE CASE STUDY IN THE WESTERN CAPE, SOUTH AFRICA". Any amendments introduced by the author hereafter are not covered by this confirmation. The author ultimately decided whether to accept or decline any recommendations made by the editor, and it remains the author's responsibility at all times to confirm the accuracy and originality of the completed work.

Leatitia Romero

(Electronically sent – no signature)

Affiliations

PEG: Professional Editors Group (ROM001)
EASA: English Academy of South Africa
SATI: South African Translators' Institute (1003002)
SfEP: Society for Editors and Proofreaders (15687)
REASA: Research Ethics Committee Association of Southern Africa (104)

Appendix 9: Follow-up visit patient flow and waiting times

Time	Participant 001	Participant 003	Participant 004	Participant 005	Participant 006	Participant 007
06:00	06:45 Arrival time			06:00 Arrival time		
07:00		07:05 Arrival time 07:08-07:12 Urine analysis weight	07:00 Arrival time 07:10-07:14 Urine analysis Weight 07:33 Blood pressure (machine needs charging) 07:53-07:54 Blood pressure	07:05-07:07 Urine analysis Weight 07:52-07:53 Blood pressure (machine removed)	07:13 Arrival time	7:05 Arrival time 07:13-07:16 Urine analysis Weight
08:00	08:58- 09:10 U/S consult	08:50-08:51 Blood pressure	08:49-08:55 Midwife consult 08:57 Reception	08:19-08:21 Blood pressure 08:30-08:40 Midwife consult (results) 08:45 Reception		08:46-08:48 Blood pressure
09:00	09:28- 09:46 Midwife consult (telephone not available) 09:47 Reception	09:42-09:48 Midwife consult 09:48 Reception				
10:00					10:34-10:45 Midwife consult (results) 10:46-10:49 Reception	10:01-10:10 Midwife consult 10:11-10:14 Reception
	Contact time: 30minutes Waiting time: 151 minutes Total time at facility: 181 minutes	Contact time: 9 minutes Waiting time: 154 minutes Total time at facility: 163 minutes	Contact time: 12 minutes Waiting time: 105 minutes Total time at facility: 117 minutes	Contact time: 16 minutes Waiting time: 149 minutes Total time at facility: 165 minutes	Contact time: 14 minutes Waiting time: 216 minutes Total time at facility: 230 minutes	Contact time: 17 minutes Waiting time: 172 minutes Total time at facility: 189 minutes

Appendix 10: Booking visit patient flow and waiting times

Time	Participant 008	Participant 009	Participant 011	Participant 012	Participant 013	Participant 014
05:30			05:50 Arrival time			
06:00	06:30 Arrival time	06:20 Arrival time		06:10 Arrival time	06:00 Arrival time	06:28 Arrival time
07:00	07:34-07:41 Urine analysis weight height					
08:00		08:39-08:46 HCT counselling	08:17-08:35 History taking MUAC 08:47-08:53 Urine analysis Weight Height	08:44-08:47 HCT counselling 08:53-08:57 Urine analysis Weight Height	08:26-08:32 Urine analysis Weight Height 08:49-09:09 Reception	08:37-08:41 HCT counselling 08:48-08:52 Reception 08:56-09:06 Urine analysis Weight Height
09:00	09:06-09:19 Reception 09:22-09:25 Blood pressure HB 09:30-09:36 HIV counsellor room 09:36-09:36 BP room	09:11-09:15 Urine analysis Weight Hight 09:25-09:29 History taking MUAC	09:04-09:10 HCT counselling	09:10-09:31 Reception 09:37-09:39 Blood pressure HB	09:39-09:42 Blood pressure HB	
10:00	10:10-10:11 Counselling room 10:40-10:44 history taking MUAC 10:44-10:52 Counsellors room	10:15-10:30 Reception 10:47-10:48 Seminar room Hand in folder	10:11-10:42 Reception	10:15-10:30 History taking	10:49-11:02 Seminar room History taking MUAC	
11:00	11:56-12:08 Midwife consult	11:00-11:03 Blood pressure Hb	11:34-11:37 Bloods drawn 11:45-11:50 Blood pressure Hb	11:15-: 11:20 Blood taken	11:28-11:44 Bloods drawn	11:20-11:28 History taking 11:28-11:31 HIV counsellor room 11:40- 12:01 Study recruiter
12:00		12:03-12:05 Blood taken 12:34-12:39 Hand in blood at seminar room		12:04-12:08 Hand in blood at seminar room 12:57-13:09 Midwife consult	12:24-12:28 Hand in blood at seminar room	12:35-12:43 Bloods drawn 12:50-12:53 Hand in blood at seminar room 12:54-14:17 Study recruiter
13:00		13:12-13:37 Midwife consult	13:00-13:11 Hand in blood at seminar room 13:17-13:59 Recruited for a study		13:17-13:31 Midwife consult	
14:00			14:00-14:13 Midwife consult			

	Contact time: 54 minutes Waiting time: 284 minutes Total time at facility: 338 minutes	Contact time: 66 minutes Waiting time: 371 minutes Total time at facility: 437 minutes	Contact time: 135 minutes Waiting time: 368 minutes Total time at facility: 503 minutes	Contact time: 65 minutes Waiting time: 354 minutes Total time at facility: 419 minutes	Contact time: 88 minutes Waiting time: 363 minutes Total time at facility: 451 minutes	Contact time: 191 minutes Waiting time: 301 minutes Total time at facility: 492 minutes
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(Departement of Health of South Africa, 2018:10)